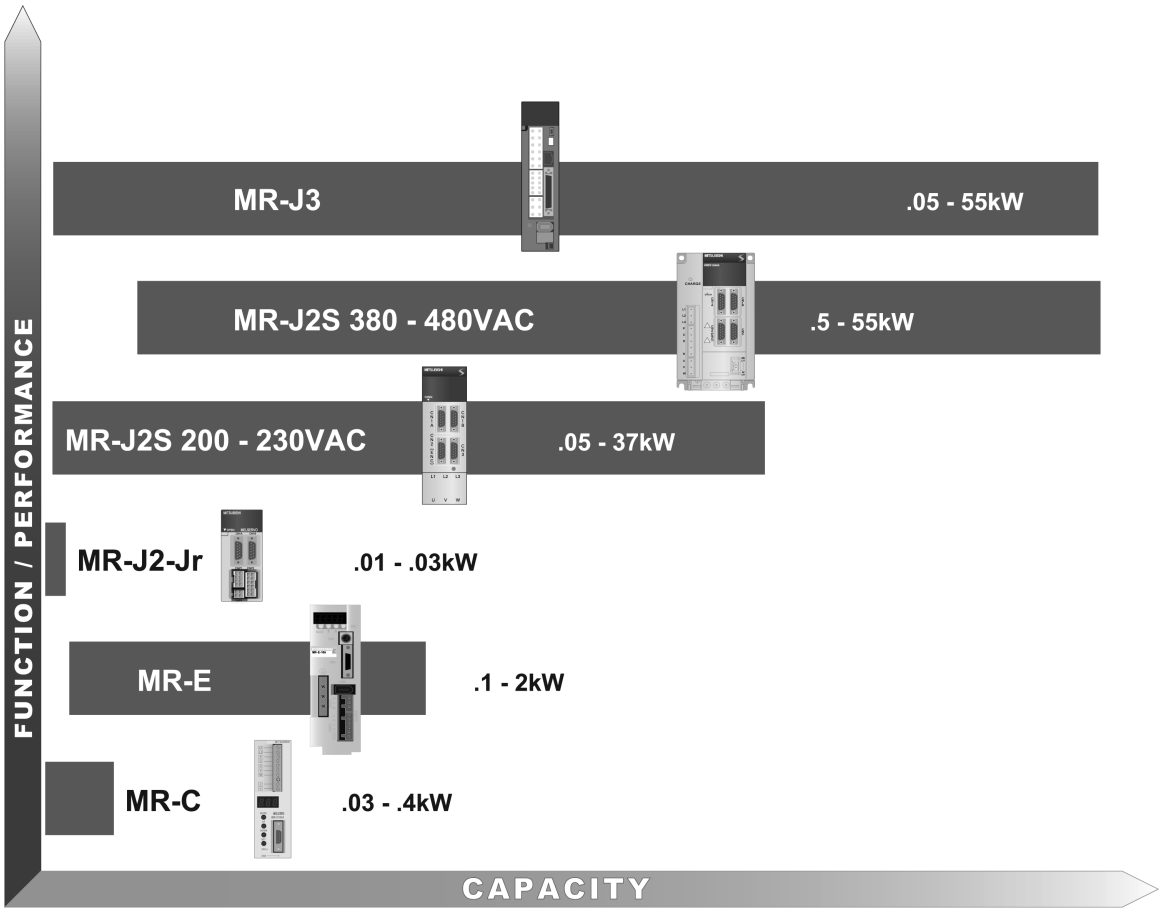
Servomotors and Amplifiers



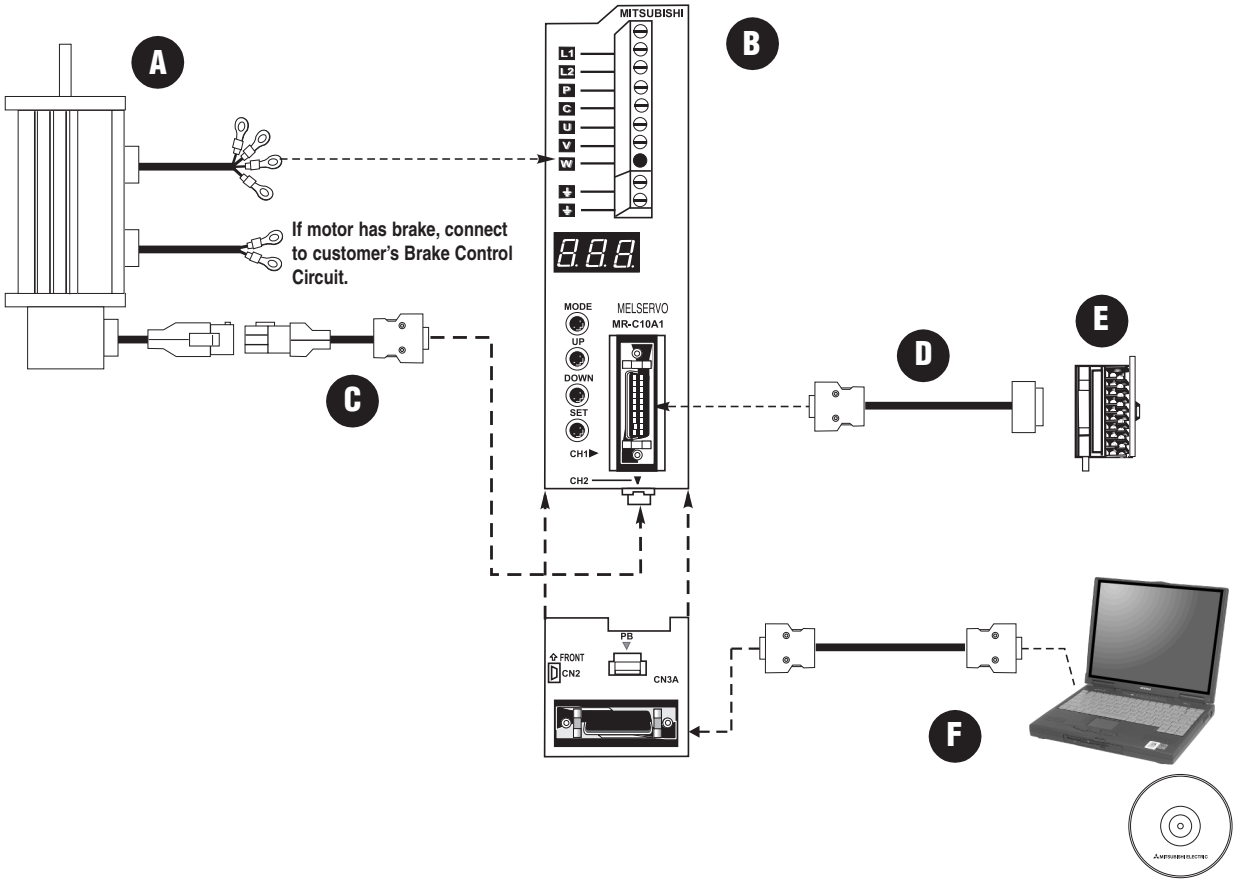
MR-C 58
MR-E Super 62
MR-J2-JR 72
MR-J2-Super 200~230VAC 75
MR-J2-Super 380~480VAC 94
MR-J3 200~230 and 380~480 VAC 113
MR-J3 Linear 165

Stock Product: Stock product is product MEAU makes every effort to have on hand for immediate shipment. There may be instances when we are out of stock due to unexpected large requirements. All stock product will be indicated in this book by an "S" in the Stocked Item columns/rows.

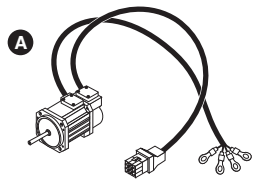
Non-Stock Product: Non-stock product is product supplied on an "as-needed" basis. Standard lead times of 12 – 16 weeks apply, product is non-returnable and non-cancelable. Product listed as non-stock may change to stock product subject to increases in sales and usage. All non-stock product will be indicated in this book by a dash "–" in the Stocked Item columns/rows.

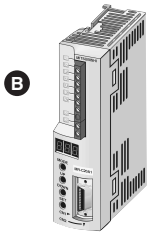
MR-C Servomotors and Amplifiers

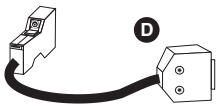
The ideal alternative to micro-stepper and 5-phase stepper motors with: patented Real-Time Adaptive Tuning; RS-232C serial interface for Windows® based set-up (MR-Configurator); and three standard pulse input formats.

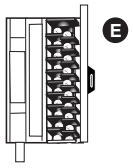


A. Motor 59
B. Amplifier 59
C. Encoder Cable 59
D. Terminal Block Cable 59
E. Terminal Block 59
F. Optional Accessories 59



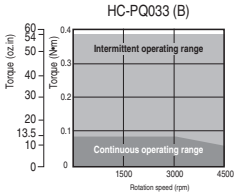


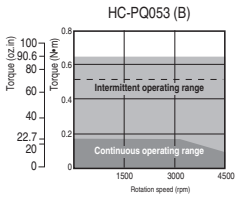


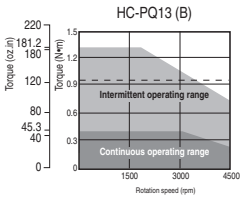


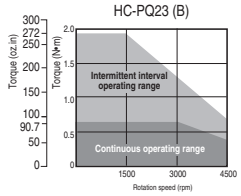
Rated Torque oz-in	Power kW	Inertia oz-in²	Motor Model No. (*1, *2, *3) A	Stocked Item	Encoder Cable Length	Encoder Model No. (*4) C	Stocked Item	Input Voltage VAC, Ph	Command Pulse Voltage	Amplifier Model No. (*5) B	Stocked Item	Terminal Block Cable Model No. (0.5, 1m) D	Stocked Item	Terminal Block Model No.	Stocked Item E
HC-PQ 3000 RPM Servomotors															
13.5	0.03	0.077	HC-PQ033-UE	–	2m	MR-JCCBL2M-L	S	110, 1	5VDC	MR-C10A1-L-UE	S	MR-CTBL05M	S	MR-TB20	S
			HC-PQ033N-UE	–	5m	MR-JCCBL5M-L	S	110, 1	24VDC	MR-C10A1-UE	S				
22.7	0.05	0.104	HC-PQ053-UE	–	10m	MR-JCCBL10M-L	S	230, 1	5VDC	MR-C10A-L-UE	–				
			HC-PQ053N-UE	–				230, 1	24VDC	MR-C10A-UE	–				
45.3	0.1	0.164	HC-PQ13-UE	S											
			HC-PQ13N-UE	S											
90.7	0.2	0.487	HC-PQ23K-UE	S	2m	MR-JCCBL2M-L	S	110, 1	5VDC	MR-C20A1-L-UE	S	MR-CTBL05M	S	MR-TB20	S
			HC-PQ23NK-UE	S	5m	MR-JCCBL5M-L	S	110, 1	24VDC	MR-C20A1-UE	S				
					10m	MR-JCCBL10M-L	S	230, 1	5VDC	MR-C20A-L-UE	–				
								230, 1	24VDC	MR-C20A-UE	S				
184	0.4	0.793	HC-PQ43K-UE	S	2m	MR-JCCBL2M-L	S	230, 1	5VDC	MR-C40A-L-UE	S	MR-CTBL05M	S	MR-TB20	S
			HC-PQ43NK-UE	S	5m	MR-JCCBL5M-L	S	230, 1	24VDC	MR-C40A-UE	S				
					10m	MR-JCCBL10M-L	S								
HC-PQ 3000 RPM Servomotors with Brake															
13.5	0.03	0.094	HC-PQ033B-UE	–	2m	MR-JCCBL2M-L	S	110, 1	5VDC	MR-C10A1-L-UE	S	MR-CTBL05M	S	MR-TB20	S
			HC-PQ033NB-UE	–	5m	MR-JCCBL5M-L	S	110, 1	24VDC	MR-C10A1-UE	S				
22.7	0.05	0.117	HC-PQ053B-UE	–	10m	MR-JCCBL10M-L	S	230, 1	5VDC	MR-C10A-L-UE	–				
			HC-PQ053NB-UE	–				230, 1	24VDC	MR-C10A-UE	–				
45.3	0.1	0.176	HC-PQ13B-UE	–											
			HC-PQ13NB-UE	–											
90.7	0.2	0.790	HC-PQ23BK-UE	–	2m	MR-JCCBL2M-L	S	110, 1	5VDC	MR-C20A1-L-UE	S	MR-CTBL05M	S	MR-TB20	S
			HC-PQ23NBK-UE	–	5m	MR-JCCBL5M-L	S	110, 1	24VDC	MR-C20A1-UE	S				
					10m	MR-JCCBL10M-L	S	230, 1	5VDC	MR-C20A-L-UE	–				
								230, 1	24VDC	MR-C20A-UE	S				
184	0.4	1.04	HC-PQ43BK-UE	–	2m	MR-JCCBL2M-L	S	230, 1	5VDC	MR-C40A-L-UE	S	MR-CTBL05M	S	MR-TB20	S
			HC-PQ43BK-UE	–	5m	MR-JCCBL5M-L	S	230, 1	24VDC	MR-C40A-UE	S				
					10m	MR-JCCBL10M-L	S								

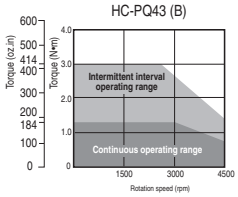
Notes:
1. Keyways with keys are only available and are STANDARD on 200W and 400W motors.
2. "N" indicates NEMA sized mounting adapter: 30 to 100 W are NEMA 23; 200 & 400 W are NEMA 34. (MOTOR SHAFT MAY NOT BE NEMA SIZE.) See manual for details.
3. Power to motor from amplifier must be provided by separate wires. Motor has pigtails (0.3m) with ring type connectors for power and optional brake connections. Motors with brakes require separate 24VDC power supply.
4. MR-JCCBL□M cable is rated IP20. No higher IP-rated cable is currently available.
5. The MR-C40A is not available in 110 VAC, 1 phase version.











Optional Accessories F		Model Number	Stk Item
6.	Encoder Connector Kit (instead of MR-JCCBL□M-L)	MR-J2CNM	S
7.	CN1 I/O Connector Kit	MR-J2CN1	S
8.	CN1 I/O Pigtail Cable	MR-CCN1CBL-3M (3 meter) MR-CCN1CBL-5M (5 meter)	S
9.	Serial Interface (RS-232C) Adaptor	MR-C-T01	–
10.	Serial Interface Cable (for use with "MR-CONFIGURATOR" and customer's PC)	MR-CPCATCBL3M (3 meter)	S
11.	Windows Communication Software "MR-CONFIGURATOR"	MR-CONFIGURATOR	S
12a.	MR-C Instruction Manual	SH(NA)3167	–
12b.	MR-C Installation Manual	IB(NA)67279	–
12c.	EMC Installation Guide	IB(NA)67310	–

Note: Many of these manuals are available for free download from our website, www.meau.com

Ⓐ MR-C Motor Specifications

Item \ Servomotor			HC-PQ Series				
			033	053	13	23	43
Corresponding Servo Amplifier Model			MR-C10A (1)			MR-C20A (1)	MR-C40A
Continuous Characteristic (*2)	Rated Output (W)		30	50	100	200	400
	Rated Torque (*6)	(N • m)	0.095	0.16	0.32	0.64	1.27
		(kgf • cm)	0.97	1.62	3.25	6.5	13.0
		(oz • in)	13.45	22.66	45.32	90.63	184.1
Max. Torque (*2)		(N • m)	0.38	0.64	1.28	1.92	2.92
		(kgf • cm)	3.88	6.48	13	19.5	29.9
		(oz • in)	53.81	90.63	181.26	271.89	414
Rated Speed (r/min)			3000				
Max. Speed (r/min)			4500				
Instantaneous Permissible Speed (r/min)			5400				5175
Power Rate at Continuous Rated Torque (kW/s)			6.45	13.47	34.13	46.02	116.55
Moment of Inertia (*7)	J (kg • cm²)		0.014	0.019	0.03	0.089	0.145
	GD² (kgf • cm²)		0.057	0.074	0.12	0.35	0.57
	WK² (oz • in²)		0.077	0.104	0.164	0.487	0.793
Recommended Load Inertia to Servomotor Shaft Inertia			30 or less times (*5)				
Rated Output Current (A)			0.85	0.85	0.85	1.5	2.8
Max. Output Current (A)			5.0	5.0	5.0	6.0	6.44
Regenerative Brake Duty (Times / Min) (*4)	Without Option		(*4-1)	(*4-1)	(*4-2)	(*4-3)	(*4-4)
	MR-RB013 (10W)		(*4-1)	(*4-1)	4660	1400	800
	MR-RB033 (30W)		(*4-1)	(*4-1)	(*4-1)	4300	2400
Power Facility Capacity (kVA)			0.1	0.2	0.3	0.5	0.9
Speed/Position Detector			Encoder (resolution 4000 (Pulse/rev))				
Accessories			Encoder (serial communication system)				
Structure			Totally enclosed, natural air cooling (protection degree: IP44 (*8))				
Environmental Condition (*1)			Refer to User Manual				
Weight (*7)	kg		0.32	0.37	0.50	0.96	1.42
	lbs		0.71	0.82	1.1	2.12	3.13

Notes:

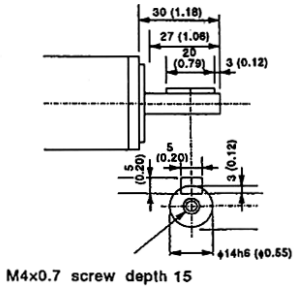
1. Special specifications are required for servomotor used in a site exposed to oil or rain.
2. The output torque and rated speed are not guaranteed during a power voltage drop.
3. The power facility capacity will differ according to the impedance.
4. The regenerative brake duty is the permissible duty applied when the servomotor under no load is decelerated to a stop from the rated speed. For those marked D, there are no limits to the regenerative duty if the effective torque is not more than the rated torque. When a load is applied, the value is 1/(m+1) of the value in the table. (m=load inertia/motor inertia). If the speed exceeds the rated speed, the permissible number of times is in inverse proportion to the square of (running speed / rated speed). When the running speed frequently varies or when the regeneration state is constantly established as in vertical motion applications, calculate the amount of regenerative heat generated during the operation so that the amount of heat generated will not be larger than the permissible value.
   4-1. There are no limits to the regenerative duty if the effective torque is not more than the rated torque.
   4-2. When the load inertia is 30 times or less, there is no limit to the regenerative brake duty, if the effective torque is not more than the rated torque.
   4-3. When the load inertia is 10 times or less, there is no limit to the regenerative brake duty, if the effective torque is not more than the rated torque.
   4-4. When the load inertia is 1 time or less, there is no limit to the regenerative brake duty, if the effective torque is not more than the rated torque.
5. Please consult Mitsubishi when the load inertia ratio exceeds the value noted above.
6. For servomotors with reduction gear, the ratio is 300% of the rated torque on the servomotor shaft.
7. For servomotors with reduction gear and electromagnetic brake, refer to the outline drawings.
8. Except the shaft and connector.

Ⓑ MR-C Amplifier Specifications

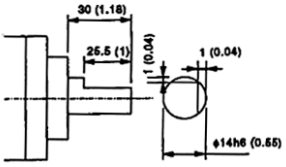
Item \ Servo Amplifier		MR-C10A	MR-C20A	MR-C40A	MR-C10A1	MR-C20A1
Power Supply (*3)	Voltage / Frequency	Single-phase 200 to 230VAC 50/60 Hz			Single-phase 100 to 120VAC 50/60 Hz	
	Permissible Voltage Fluctuation	Single-phase 170VAC to 253 VAC			Single-phase 85 to 126VAC	
	Permissible Frequency Fluctuation	Within ± 5%				
Control Method		Sine-wave PWM control, current controlled system				
Control Mode		Pulse train input position control				
Control Theory		Model adaptive control				
Auto Tuning		Real-time auto tuning				
Protective Functions		Over current protection, motor combination fault, overload shut off (electronic thermal relay) over voltage protection, encoder alarm protection, regenerative alarm protection, under voltage/ instantaneous power failure protection, over speed protection, excessive error protection				
Position Control Specifications	Max. Input Pulse Frequency	200kpps				
	Positioning Feedback Pulses	4000 pulse/rev servomotor revolution				
	Command Pulse Multiplication	Electronic gear A, B: 1 to 999 pulses 1/50 < A/B <20				
	Positioning Completion Width Setting	0 to 999 pulses				
	Excessive Error	± 50K pulses				
Interface Power Supply		24VDC or 5VDC power supplied from outside				
Communication with Personal Computer	Required	RS-232C option unit (MR-C-T01), communication cable, setup software				
	Functions	Status display, diagnostic display, alarm display, parameter setting, operation waveform monitor				
Structure		Open				
Environment Conditions		Refer to User Manual				
Weight	kg	0.6		1.0	0.6	
	lbs	1.32		2.20	1.32	

MR-C Shaft Dimensions

With Key

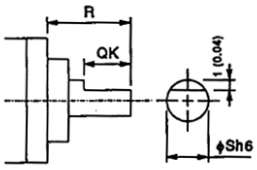


L Cut



Servo Motor Model	Shaft Shape		
	With Key	D Cut	L Cut
HC-PQ033	—	X	—
HC-PQ053	—	X	—
HC-PQ13	—	X	—
HC-PQ23	X	X	X
HC-PQ43	X		X

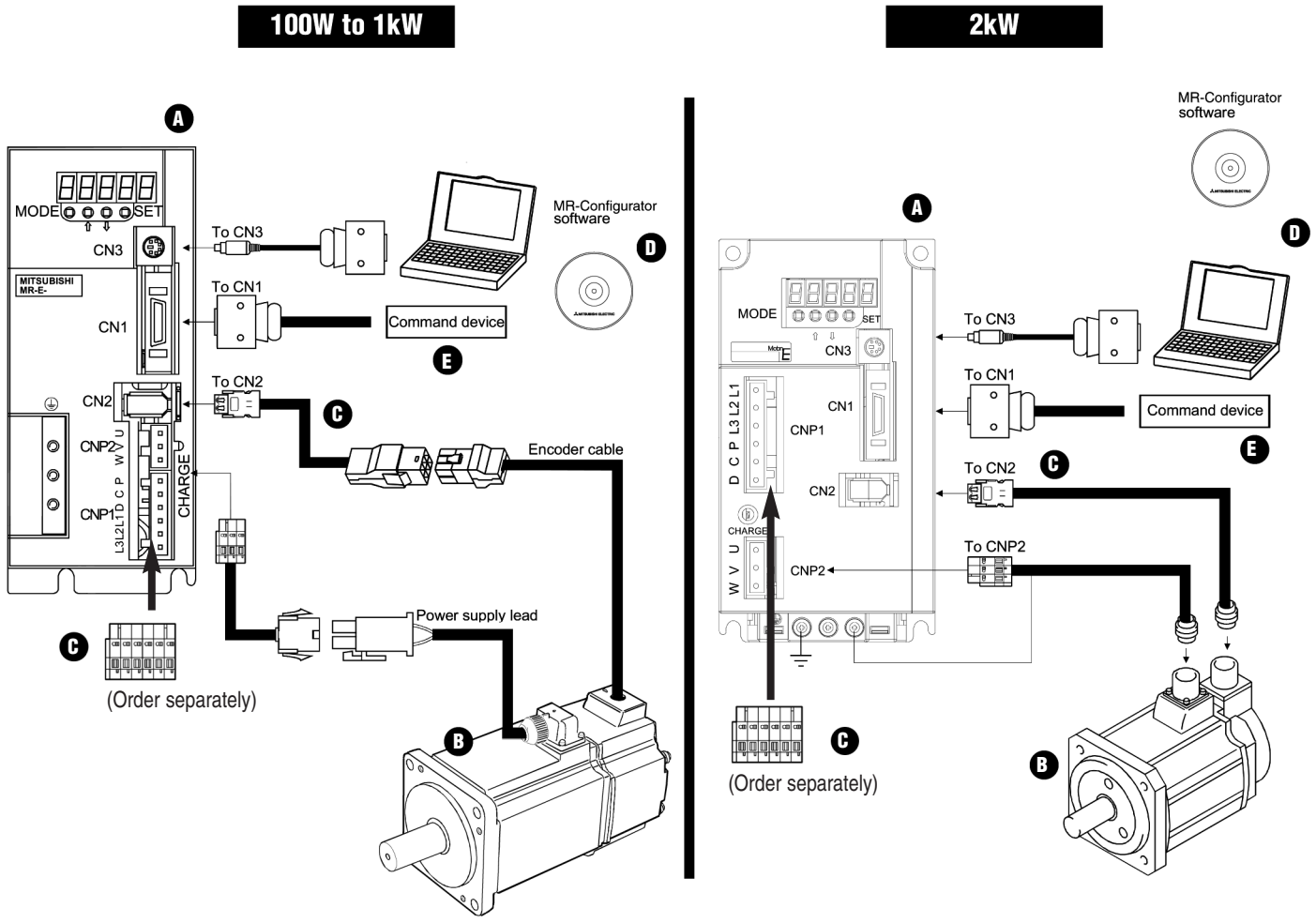
D Cut



Servo Motor Model	Variable Dimensions		
	R	QK	S
HC-PQ033 HC-PQ053 HC-PQ13	25 (0.98)	20.5 (0.81)	8 (0.31)
HC-PQ23 HC-PQ43	30 (1.18)	25.5 (1)	14 (0.55)

MR-E Super Servomotors and Amplifiers

High performance and compact, the MR-E Super is an excellent choice for applications up to 2kW. The MR-E Super is available in pulse-train position or analog speed/torque models. The amplifier features Mitsubishi Electric's legendary auto-tuning and vibration suppression functions, a 400 Hz analog frequency response, and accepts pulse commands up to 500 kHz. The motors are low to medium inertia up to 4500 rpm and are equipped with a 131,072 pulse per revolution encoder. Set-up and diagnosis is made easy with the MR-Configurator Windows® based software.

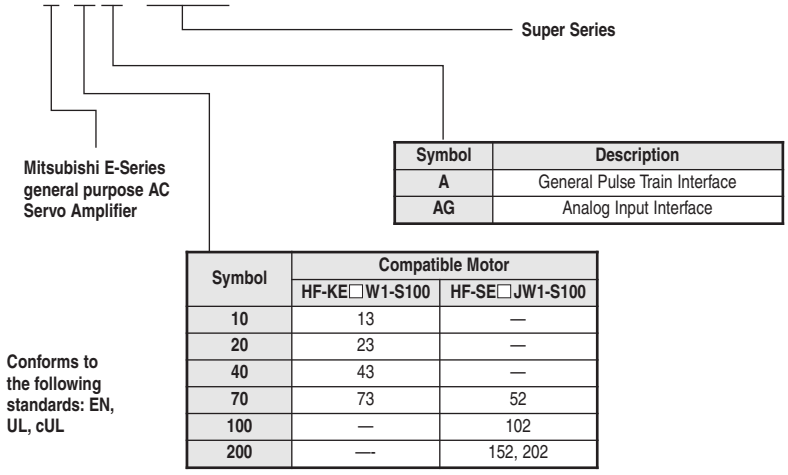


A. Amplifier 63
B. Motor 64
C. Cables / Connectors 67
D. Software and Manuals 70
E. Optional Accessories 70

Ⓐ MR-E Super Amplifiers

Amplifier Selection

MR-E-□□ -KH003



Symbol	Description
A	General Pulse Train Interface
AG	Analog Input Interface

Symbol	Compatible Motor	
	HF-KE□W1-S100	HF-SE□JW1-S100
10	13	—
20	23	—
40	43	—
70	73	52
100	—	102
200	—-	152, 202

Stocked Amplifiers

Model Number
MR-E-10A-KH003
MR-E-10AG-KH003
MR-E-20A-KH003
MR-E-20AG-KH003
MR-E-40A-KH003
MR-E-40AG-KH003
MR-E-70A-KH003
MR-E-70AG-KH003
MR-E-100A-KH003
MR-E-100AG-KH003
MR-E-200A-KH003
MR-E-200AG-KH003

Servo Standard Specifications

Servo Amplifier			MR-E-10A-KH003	MR-E-20A-KH003	MR-E-40A-KH003	MR-E-70A-KH003	MR-E-100A-KH003	MR-E-200A-KH003
Servo Amplifier with Analog Input Interface			MR-E-10AG-KH003	MR-E-20AG-KH003	MR-E-40AG-KH003	MR-E-70AG-KH003	MR-E-100AG-KH003	MR-E-200AG-KH003
Power Supply	Voltage / Frequency		3-phase 200 to 230VAC, 50/60Hz or 1-phase 230VAC, 50/60Hz				3-phase 200 to 230VAC, 50/60Hz	
	Permissible Voltage Fluctuation		3-phase 200 to 230VAC: 170 to 253VAC 1-phase 230 VAC: 207 to 253VAC				3-phase 170 to 253VAC	
	Permissible Frequency Fluctuation		Within ±5%					
System			Sine-wave PWM control, current control system					
Dynamic Brake			Built-in					
Protective Functions			Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal relay), encoder error protection, regenerative brake error protection, undervoltage, instantaneous power failure protection, overspeed protection, excessive error protection					
A Type Amps	Position Control Mode	Max. Input Pulse Frequency	1 Mpps (for differential receiver), 200kpps (for open collector)					
		Command Pulse Multiplying Factor	Electronic gear A:1 to 65535 B:1 to 65535, 1/50 < A/B < 50					
		In-Position Range Setting	0 to ± 16384 pulse (command pulse unit)					
		Error Excessive	±2.5 revolutions					
		Torque Limit	Set by parameter setting					
	Internal Speed Control Mode	Speed Control Range	Internal speed command 1: 5000					
		Speed Fluctuation Ratio	±0.01% or less (load fluctuation 0 to 100%); 0% or less (power fluctuation ±10%)					
		Torque Limit	Set by parameter setting					
AG Type Amps	Speed Control Mode	Speed Control Range	Analog speed command 1: 2000, internal speed command 1: 5000					
		Analog Speed Command Input	0 to ± 10VDC / Rated speed					
		Speed Fluctuation Ratio	±0.01% or less (load fluctuation 0 to 100%); 0% or less (power fluctuation ±10%) ±0.2% max. (ambient temperature 25 ±10°C) for external speed setting only					
		Torque Limit	Set by parameter setting or external analog input (0 to +10VDC / maximum torque)					
	Torque Control Mode	Analog Torque Command Input	0 to ±8VDC / Maximum torque (input impedance 10 to 12kΩ)					
		Speed Limit	Set by parameter setting or external analog input (0 to ±10 / Rated speed)					
Structure			Self-cooled, open (IP00)					Force-cooling, open (IP00)
Environment	Ambient Temperature	Operation °C (°F)	0 to +55 (non-freezing) (32 to +131 (non-freezing))					
		Storage °C (°F)	-20 to +65 (non-freezing) (-4 to +149 (non-freezing))					
	Ambient Humidity	Operation	90%RH or less (non-condensing)					
		Storage						
	Ambient		Indoors (no direct sunlight) Free from corrosive gas, flammable gas, oil mist, dust and dirt					
	Altitude		Max. 1000m (3280 ft) above sea level					
	Vibration		5.9 [m/s²] or less; 19.4 [ft/s²] or less					
Weight kg (lb)			0.7 (1.5)	0.7 (1.5)	1.1 (2.4)	1.7 (3.7)	1.7 (3.7)	2.0 (4.4)

B MR-E Super Servomotors

Servomotor Selection

HF-KE □ 3 □ □ W1-S100

- W1-S100: Super Series; Encoder Resolution 131,072 ppr (Inc)
- □ (shaft shape):

Symbol	Shaft Shape
None	Standard (Straight Shaft)
K	With Keyway (Note)

Note: Keyway only on 200W ~ 700W with key included.

- 3: Rated Speed 3000 (r/min)
- □ (brake):

Symbol	Electromagnetic Brake
None	Without Brake
B	With Brake

- □ (rated output):

Symbol	Rated Output (W)
1	100
2	200
4	400
7	750

Stocked Motors

Model Number
HF-KE13W1-S100
HF-KE13BW1-S100
HF-KE23KW1-S100
HF-KE23BKW1-S100
HF-KE43KW1-S100
HF-KE43BKW1-S100
HF-KE73KW1-S100
HF-KE73BKW1-S100

HF-SE □ 2 □ J □ W1-S100

- W1-S100: Super Series; Encoder Resolution 131,072 ppr (Inc)
- J: With Oil Seal
- □ (shaft shape):

Symbol	Shaft Shape
None	Standard (Straight Shaft)
K	With Keyway (Note)

Note: Key **not** included.

- 2: Rated Speed 2000 (r/min)
- □ (brake):

Symbol	Electromagnetic Brake
None	Without Brake
B	With Brake

- □ (rated output):

Symbol	Rated Output (W)
5	500
10	1000
15	1500
20	2000

Stocked Motors

Model Number
HF-SE52JKW1-S100
HF-SE52BJKW1-S100
HF-SE102JKW1-S100
HF-SE102BJKW1-S100
HF-SE152JKW1-S100
HF-SE152BJKW1-S100
HF-SE202JKW1-S100
HF-SE202BJKW1-S100

	Motor Series	Rated Speed (Max. r/min)	Rated Output Capacity (kW)	Servomotor Brake (B)	EN	UL cUL	Protective Rating	Features	Application Examples
Small Capacity	HF-KE Super Series	3000 (4500)	4 Types 0.1, 0.2, 0.4, 0.75	Yes	Yes	Yes	IP55 Excluding the shaft-through portion and connector	Stable control from low speeds to high speeds allows compliance with a variety of applications.	Belt Drive Robots Mounters Sewing Machines X-Y Tables Food Processing Machines
Medium Capacity	HF-SE Super Series	2000 (3000)	4 Types 0.5, 1.0, 1.5, 2.0	Yes	Yes	Yes	IP55 Excluding the shaft-through portion		Conveyor Machines Robots X-Y Tables

MR-E HF-KE Super 3000 Series Servomotor Specifications

Servomotor Model			HF-KE13W1-S100	HF-KE23W1-S100	HF-KE43W1-S100	HF-KE73W1-S100
Servomotor Model with Brake			HF-KE13BW1-S100	HF-KE23BW1-S100	HF-KE43BW1-S100	HF-KE73BW1-S100
Servo Amplifier Model			MR-E-10A-KH003	MR-E-20A-KH003	MR-E-40A-KH003	MR-E-70A-KH003
Servo Amplifier Model with Analog Input Interface			MR-E-10AG-KH003	MR-E-20AG-KH003	MR-E-40AG-KH003	MR-E-70AG-KH003
Servomotor	Power Facility Capacity (kVA)		0.3	0.5	0.9	1.3
	Continuous Running Duty (*1)	Rated Output (W)	100	200	400	750
		Rated Torque (N·m [oz·in])	0.32 (45.3)	0.64 (90.6)	1.3 (184)	2.4 (340)
	Maximum Torque (N·m [oz·in])		0.95 (135)	1.9 (269)	3.8 (538)	7.2 (1020)
	Rated Speed (r/min)		3000			
	Maximum Speed (r/min)		4500			
	Permissible Instantaneous Speed (r/min)		5175			
	Power Rate at Continuous Rated Torque (kW/s)		11.5	16.9	38.6	39.9
	Rated Current (A)		0.8	1.4	2.7	5.2
	Maximum Current (A)		2.4	4.2	8.1	15.6
	Regenerative Breaking Frequency (Times/ Min)	With No Options	(*3)	(*3)	249	140
		MR-RB032 (30W)	(*3)	(*3)	747	210
		MR-RB12 (100W)	—	(*3)	2490	700
		MR-RB32 (300W)	—	—	—	2100
	Moment of Inertia J (x10^{-4}kg•m^2) [J (oz·in^2)]	Standard	0.088 (0.481)	0.24 (1.31)	0.42 (2.30)	1.43 (7.82)
		With Electromagnetic Brake	0.090 (0.492)	0.31 (1.69)	0.50 (2.73)	1.63 (8.91)
	Recommended Load/Motor Inertia Moment Rate		15 times the servo motor's inertia moment maximum (*2)			
	Speed/Position Detector		Incremental encoder (resolution per servo motor rotation: 131,072 p/rev)			
	Attachments		—			
	Structure		Totally enclosed non ventilated (protection level: IP55) (*4)			
	Environment (*5)	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)			
		Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)			
		Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust			
		Elevation/Vibration (*6)	1000m or less above sea level; X: 49m/s^2 Y: 49m/s^2			
	Mass kg (lb)	Standard	0.56 (1.3)	0.94 (2.1)	1.5 (3.3)	2.9 (6.4)
		With Electromagnetic Brake	0.86 (1.9)	1.6 (3.6)	2.1 (4.7)	3.9 (8.6)

Notes:

1. The rated output and rated speed of the servo motor assume that the rated power supply voltage and frequency are as indicated in Section 1.3 of the MR-E instruction manual.
2. If the load inertia moment ratio exceeds the indicated value, please consult MEAU.
3. When the effective torque is within the rated torque range, there are no restrictions on the regenerative brake duty. Note that the recommended load inertia moment ratio is 15 times or less.
4. Except for the shaft-through portion.
5. In the environment where the servo motor is exposed to oil mist, oil and/or water, the servo motor of the standard specifications may not be usable. Contact MEAU.
6. The vibration direction is shown on the diagram below. The numeric value indicates the maximum value of the component (commonly the bracket is in the opposite direction of the motor shaft). When the servo motor stops, fretting is likely to occur at the bearing.Therefore, suppress the vibration to about half of the permissible value.

MR-E HF-SE Super 2000 r/min Series Servomotor Specifications

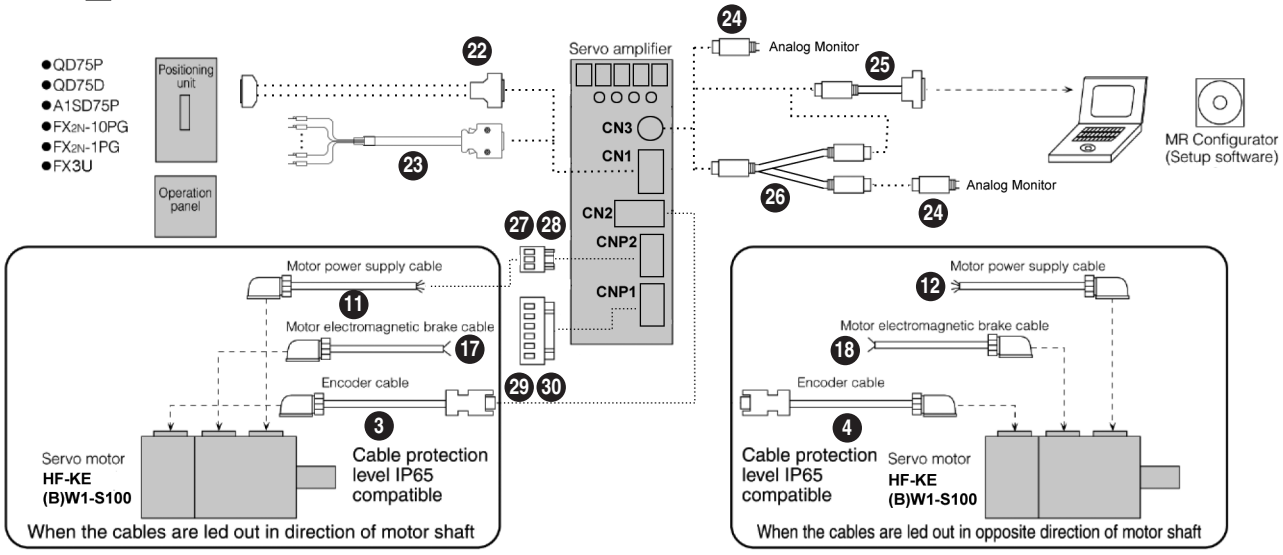
Servomotor Model			HF-SE52JW1-S100	HF-SE102JW1-S100	HF-SE152JW1-S100	HF-SE202JW1-S100
Servomotor Model with Brake			HF-SE52BJW1-S100	HF-SE102BJW1-S100	HF-SE152BJW1-S100	HF-SE202BJW1-S100
Servo Amplifier Model			MR-E-70A-KH003	MR-E-100A-KH003	MR-E-200A-KH003	
Servo Amplifier Model with Analog Input Interface			MR-E-70AG-KH003	MR-E-100AG-KH003	MR-E-200AG-KH003	
Servomotor	Power Facility Capacity (kVA)		1.0	1.7	2.5	3.5
	Continuous Running Duty (*1)	Rated Output (kW)	0.5	1.0	1.5	2.0
		Rated Torque (N·m [oz·in])	2.39 (338)	4.77 (675)	7.16 (1010)	9.55 (1350)
	Maximum Torque (N·m [oz·in])		7.16 (1010)	14.3 (2020)	21.5 (3040)	28.6 (4050)
	Rated Speed (r/min)		2000			
	Maximum Speed (r/min)		3000			
	Permissible Instantaneous Speed (r/min)		3450			
	Power Rate at Continuous Rated Torque (kW/s)		9.34	19.2	28.8	23.8
	Rated Current (A)		2.9	5.3	8.0	10
	Maximum Current (A)		8.7	15.9	24	30
	Regenerative Braking Frequency (Times/Min) (*3, 4)	With No Options	120	62	152	71
		MR-RB032 (30W)	180	93	—	—
		MR-RB12 (100W)	600	310	—	—
		MR-RB30 (300W)	—	—	456	213
		MR-RB32 (300W)	1800	930	—	—
		MR-RB50 (500W)	—	—	760	355
	Moment of Inertia J (x10^{-4}kg·m^2) [J (oz·in^2)]	Standard	6.1 (33.4)	11.9 (65.1)	17.8 (97.3)	38.3 (209)
		With Electromagnetic Brake	8.3 (45.4)	14.0 (76.5)	20.0 (109)	47.9 (262)
	Recommended Load/Motor Inertia Moment Ratio		15 times the servo motor's inertia moment maximum (*2)			
	Speed/Position Detector		Incremental encoder (resolution per servo motor: 131,072 p/rev)			
	Attachments		—			
	Structure		Totally enclosed non ventilated (protection level: IP55)			
	Environment (*3)	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)			
		Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)			
		Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust			
		Elevation	1000m or less above sea level			
		Vibration (*4)	X, Y : 24.5m/s^2			X : 24.5m/s^2 Y : 49m/s^2
	Mass (kg [lb])	Standard	4.8 (11)	6.5 (15)	8.3 (19)	12 (27)
		With Electromagnetic Brake	6.7 (15)	8.5 (19)	11 (25)	18 (40)

Notes:

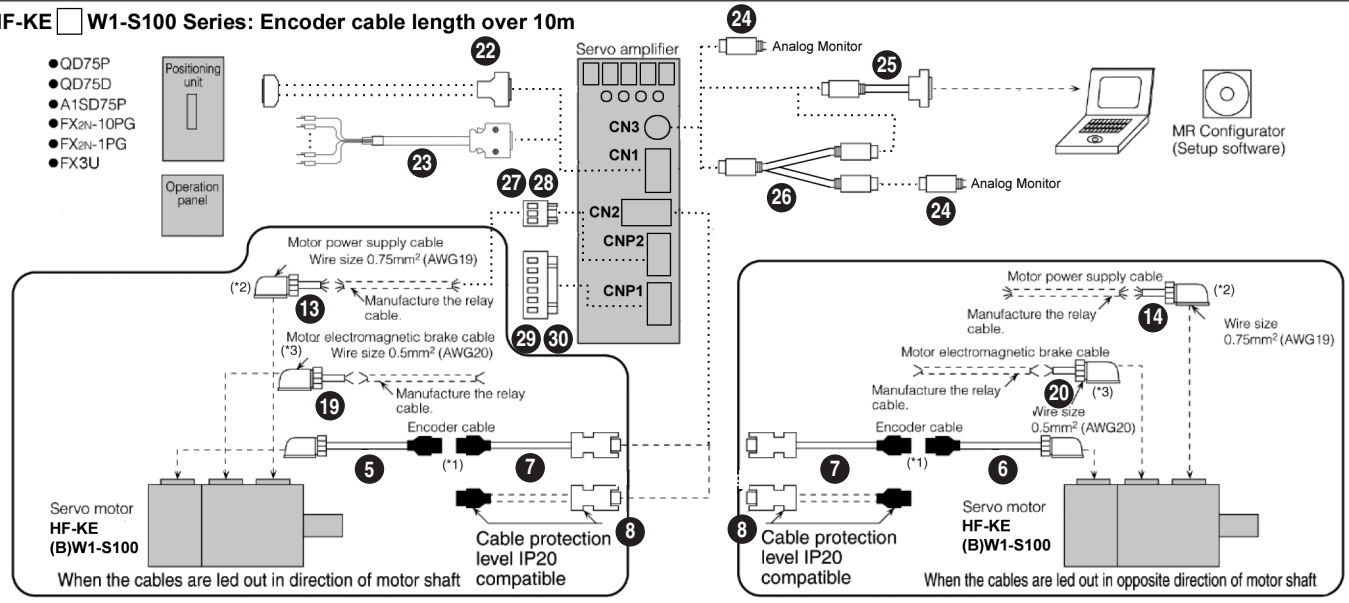
1. The rated output and rated speed of the servo motor assume that the rated power supply voltage and frequency are as indicated in Section 1.3 of the MR-E Manual.
2. If the load inertia moment ratio exceeds the indicated value, please consult MEAU.
3. In the environment where the servo motor is exposed to oil mist, oil and/or water, the servo motor of the standard specifications may not be useable. Contact MEAU.
4. The vibration direction is shown on the diagram below. The numeric value indicates the maximum value of the component (commonly the bracket is in the opposite direction of the motor shaft). When the servo motor stops, fretting is likely to occur at the bearing. Therefore, suppress the vibration to about half of the permissible value.

C Cables and Connectors

HF-KE□W1-S100 Series: Encoder cable length 10m or shorter

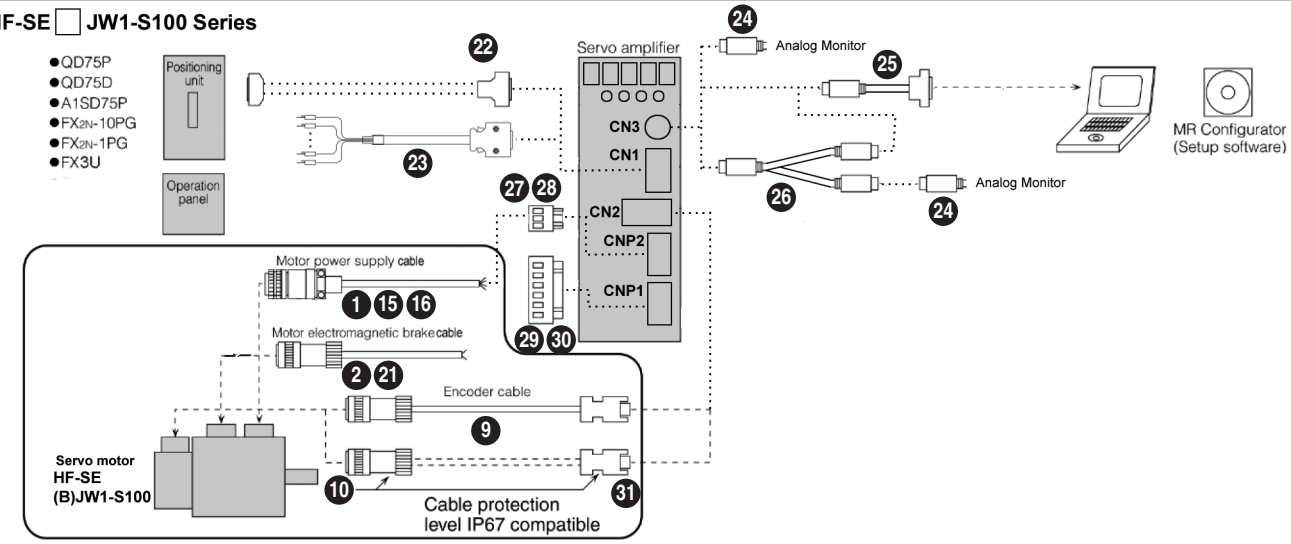


HF-KE□W1-S100 Series: Encoder cable length over 10m

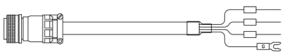


Notes: 1. This cable does not have a long bending life, please be sure to secure the cable before using.
2. If the length exceeds 10m, use the needed length extension cable (customer supplied) in junction with the MR-PWS2CBL03M-A1-L/-A2-L. This cable does not have a long bending life, please be sure to secure the cable before using.
3. If the length exceeds 10m, use the needed length extension cable (customer supplied) in junction with the MR-BKS2CBL03M-A1-L/-A2-L. This cable does not have a long bending life, please be sure to secure the cable before using.

HF-SE□JW1-S100 Series



MR-E Super Cables and Connectors (refer to chart on previous page)

Item				Cable Number (□ = cable length 2, 5, 10, 15, 20, 25, 30 meter)	Stocked Lengths	Protection Level	Description
Power Cables HF-SE□(B)JW1-S100	❶	Standard-Flex, Unshielded Type Cables (Straight Type Connector Only)	HF-SE52(B)JW1-S100 (*1)	MR-J3P1-□M (*2)	2M, 5M, 10M, 20M, 30M	IP65	
			HF-SE102(B)JW1-S100 (*1)	MR-J3P2-□M (*2)			
			HF-SE152(B)JW1-S100 (*1)	MR-J3P3-□M (*2)			
			HF-SE202(B)JW1-S100 (*1)	MR-J3P4-□M (*2)			
		High-Flex, Shielded Type Cables (Straight type connector only)	HF-SE52(B)JW1-S100 (*1)	MR-J3PWS1-□M (*2)	—	IP67	
			HF-SE102(B)JW1-S100 (*1)	MR-J3PWS2-□M (*2)			
			HF-SE152(B)JW1-S100 (*1)	MR-J3PWS3-□M (*2)			
			HF-SE202(B)JW1-S100 (*1)	MR-J3PWS4-□M (*2)			
Brake Cables HF-SE□BJW1-S100	❷	Standard-Flex, Unshielded Type Cables		MR-J3BK-□M	2M, 5M, 10M, 20M, 30M	IP65	
		High-Flex, Shielded Type Cables		MR-J3BRKS1-□M	—	IP65	
Encoder Cable for CN2 Connector HF-KE□(B)W1-S100	❸	10m or Shorter (Direct Connection Type)	Lead Out In Direction Of Motor Shaft	MR-J3ENCBL□M-A1-H (□ = cable length 2, 5, 10m) (*3)	2, 5, 10	IP65	Encoder Side / Amplifier Side
				MR-J3ENCBL□M-A1-L (□ = cable length 2, 5, 10m) (*3)	2, 5, 10	IP65	
	❹		Lead Out In Opposite Direction Of Motor Shaft	MR-J3ENCBL□M-A2-H (□ = cable length 2, 5, 10m) (*3)	2, 5, 10	IP65	
				MR-J3ENCBL□M-A2-L (□ = cable length 2, 5, 10m) (*3)	2, 5, 10	IP65	
	❺	Exceeding 10m (Relay Type)	Lead Out In Direction Of Motor Shaft	MR-J3JCBL03M-A1-L (Cable length 0.3m) (*3)	S	IP20	Encoder Side / Junction Connector
	❻		Lead Out In Opposite Direction Of Motor Shaft	MR-J3JCBL03M-A2-L (Cable length 0.3m) (*3)	S	IP20	
	❼		Amplifier-Side Cable	MR-EKCBL□M-H (□ = cable length 20, 30, 40, 50m) (*3)	20, 30	IP20	Use this in combination of 5 or 6.
				MR-EKCBL□M-L (□ = cable length 20, 30m) (*3)	–	IP20	
	❽		Junction Connector, Amplifier-Side Connector (*2)	MR-ECNM	S	IP20	
Encoder Cable for CN2 Connector HF-SE□(B)JW1-S100	❾	Encoder Cable		MR-ESCBL□M-H (□ = cable length 2, 5, 10, 20, 30, 40, 50m) (*3)	2, 5, 10, 20, 30	IP67	
				MR-ESCBL□M-L (□ = cable length 2, 5, 10, 20, 30m) (*3)	–	IP67	
	❿	Encoder Connector Set		MR-ECNS	S	IP67	Encoder Side / Amplifier Side
Motor Power Supply Cables For CNP2 HF-KE□(B)W1-S100	⓫	10m Or Shorter (Direct Connection Type)	Lead Out In Direction Of Motor Shaft	MR-PWS1CBL□M-A1-H (□ = cable length 2, 5, 10m) (*3)	2, 5, 10	IP65	
				MR-PWS1CBL□M-A1-L (□ = cable length 2, 5, 10m) (*3)	2, 5, 10	IP65	
	⓬		Lead Out In Opposite Direction of Motor Shaft	MR-PWS1CBL□M-A2-H (□ = cable length 2, 5, 10m) (*3)	2, 5, 10	IP65	
				MR-PWS1CBL□M-A2-L (□ = cable length 2, 5, 10m) (*3)	2, 5, 10	IP65	
	⓭	Exceeding 10m (Relay Type)	Lead Out In Direction Of Motor Shaft	MR-PWS2CBL03M-A1-L (Cable length 0.3m) (*3)	S	IP55	
	⓮		Lead Out In Opposite Direction Of Motor Shaft	MR-PWS2CBL03M-A2-L (Cable length 0.3m) (*3)	S	IP55	

Notes:
1. Must order separate brake cable for these motors.
2. Must order separate power connector ㉗ or ㉘ to connect to the power cable.
3. -H and -L indicate bending life. -H indicates a long bending life and -L indicates a standard bending life.

MR-E Super Cables and Connectors (refer to chart on previous page)

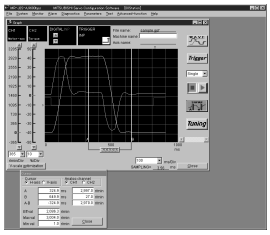
Item				Model	Stocked Lengths	Protection Level	Description
Power Supply Connectors	15	Motors: HF-SE52(B)JW1-S100 HF-SE102(B)JW1-S100 HF-SE152(B)JW1-S100 See 1 For The Power Cable		MR-PWCNS4 (Straight type only)	S	IP67	
	16	Motor: HF-SE202(B)JW1-S100 See 1 For The Power Cable		MR-PWCNS5 (Straight type only)	S	IP67	
Motor Brake Cables For HF-KE□BW1-S100	17	10m Or Shorter (Direct Connection Type)	Lead Out In Direction Of Motor Shaft	MR-BKS1CBL□M-A1-H (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
				MR-BKS1CBL□M-A1-L (□ = cable length 2, 5, 10m) (*1)	–	IP65	
	18		Lead Out In Opposite Direction Of Motor Shaft	MR-BKS1CBL□M-A2-H (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
				MR-BKS1CBL□M-A2-L (□ = cable length 2, 5, 10m) (*1)	–	IP65	
	19	Exceeding 10m (Relay Type)	Motor Lead Out In Direction Of Motor Shaft	MR-BKS2CBL03M-A1-L (Cable length 0.3m) (*1)	S	IP55	
	20		Lead Out In Opposite Direction Of Motor Shaft	MR-BKS2CBL03M-A2-L (Cable length 0.3m) (*1)	S	IP55	
Brake Connector Set For HF-SE□BJW1-S100	21	Brake Connector See 2 For The Brake Cable		MR-BKCNS1 (Straight type only)	S	IP67	
Connector for CN1 on Amp	22	CN1 Connector (26 Pin)		MR-ECN1	S	—	
Pigtail Cable for CN1 on Amp	23	CN1 Pigtail Cable (26 Pin)		MR-ECN1CBL-3M	S	—	
Connector and Cable Options For CN3 Connector on Amp	24	Analog Monitor RS-232C Connector		MR-ECN3	S	—	
	25	Communication Cable		SC-Q	S	—	
	26	Analog Monitor RS-232C Branch Cable		MR-E3CBL15-P	S	—	
CNP2 Power to Motor Connector	27	MR-E10 to 100A/AG-KH003		MR-ECNP2-B	S	—	
	28	MR-E200A/AG-KH003 Amp Only		MR-ECNP2-B1	S	—	
CNP1 Amp Power Input Connector	29	MR-E10 to 100A/AG-KH003 Amps		MR-ECNP1-B	S	—	
	30	MR-E200A/AG-KH003 Amp Only		MR-ECNP1-B1	S	—	
CN2 Connector	31	CN2 Connector Only		MR-J3CN2	S	—	

Note:
1. -H and -L indicate bending life. -H indicates a long bending life and -L indicates a standard bending life.

Ⓓ Software and Manuals

MR-Configurator Setup Software

This Windows®-based software package is used to setup, program and test the amplifier. Initial setup and programming is easy and quick with the user-friendly software, which has extensive help functions and drop-downs. MR-Configurator also has many diagnostic functions such as a machine simulator to aid in mechanical design, a machine analyzer to find resonant frequencies of the load and set notch filters, an alarm monitor with history data, and the ability to assign and monitor I/O.



Features:

- Can be set up using a personal computer. Works on Windows 95/98/NT/ME/2000 Professional, XP Professional*.
- Provides numerous monitor functions. Provides graph display function that enables display of servomotor status upon input signal triggers such as command pulses, droop pulses, and r/min.
- Allows servomotors to be tested easily from a personal computer.

* Windows is a registered trademark of the Microsoft Corporation.

Description	Model Number	Stk Item
Windows Communication Software	MR-CONFIGURATOR	S
Communications Cable	SC-Q	S

Manuals

Hardware Description	Model Number	Stk Item
MR-E-A/AG-KH003 Instruction Manual	Not available at time of print	–
EMC Guidelines (Servo) Manual	IB(NA)67310	–

Note: Many of these manuals are available for free download from our website, www.meau.com

Ⓔ Optional Accessories

Filters

Description	Model Type	Model Number	Stocked Item
Line Noise Filter	All MR-E Models	FR-BSF01	S
230V RF Filter	All MR-E Models	FR-BIF	S
EMC Filter	MR-E-10 to 70	SF1252	S
EMC Filter	MR-E-100	MF-3F480-010.230	–
EMC Filter	MR-E-200	MF-3F480-025.230	–

Regenerative Brake Options

Servo Amplifier	Model Number – Regenerative Power [W]					
	Built-In Regen. Resistor	MR-RB032 [40ohm]	MR-RB12 [40ohm]	MR-RB32 [40ohm]	MR-RB30 [40ohm]	MR-RB50 [40ohm] (Note)
Stocked Item	N/A	S	S	S	S	S
MR-E-10	—	30	—	—	—	—
MR-E-20	—	30	100	—	—	—
MR-E-40	10	30	100	—	—	—
MR-E-70	20	30	100	300	—	—
MR-E-100	20	30	100	300	—	—
MR-E-200	100	—	—	—	300	500

Note: Always install a cooling fan when using MR-RB50.

AC Power Improving Reactor Options

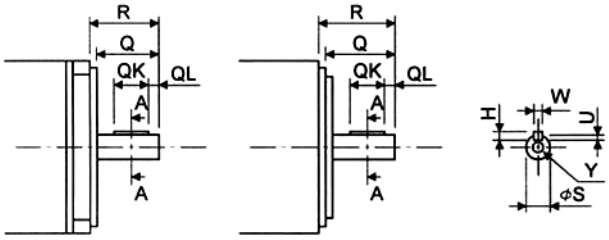
Model Type	Model Number	Stocked Item
MR-E-10 and 20	MRL-00402	S
MR-E-40	MRL-00402	S
MR-E-70	MRL-00802	S
MR-E-100	MRL-01202	S
MR-E-200	MRL-01802	S

MR-E Super Shaft Detail

Servo Motor Model	Shaft Shape		
	With Key	D Cut	L Cut
HF-SE52 – 202	✔ (*2)	—	✔ (*3)
HF-KE13	—	✔	✔ (*3)
HF-KE23 – 73	✔ (*1)	—	✔ (*3)

Notes:
1. With a key.
2. Without a key.
3. This is a standard. For shape refer to manual.

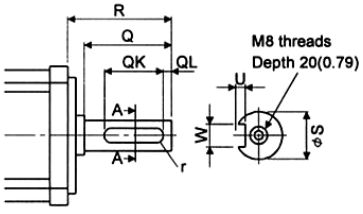
With Key



Servo Motor Model	Variable Dimensions								
	S	R	Q	W	QK	QL	U	H	Y
HF-KE23K • 43K	14h6 (0.554)	30 (1.18)	27 (1.06)	5 (0.20)	20 (0.79)	3 (0.12)	3 (0.12)	5 (0.20)	M4 Depth 15 (0.59)
HF-KE73K	19h6 (0.7480)	40 (1.57)	37 (1.46)	6 (0.24)	25 (0.98)	5 (0.20)	3.5 (0.14)	6 (0.24)	M5 Depth 20 (0.79)

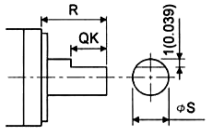
Without Key

Servo Motor Model	Variable Dimensions									
	S	R	Q	W	QK	QL	U	r	Key Dimension	Model Number
HF-SE25K – 152K	24h6 (0.94)	55 (2.17)	50 (1.97)	$8^{0}_{-0.036}$ (0.31)	36 (1.42)	5 (0.20)	$4^{+0.2}_{0}$ (0.16)	4 (0.16)	8 x 7 x 28	MTR KEY 8-7-28
HF-SE202K	35 (1.38)	79 (3.11)	75 (2.95)	$10^{0}_{-0.036}$ (0.39)	55 (2.17)	5 (0.20)	$5^{+0.2}_{0}$ (0.20)	5 (0.20)	10 x 8 x 45	MTR KEY 10-8-45



D-Cut

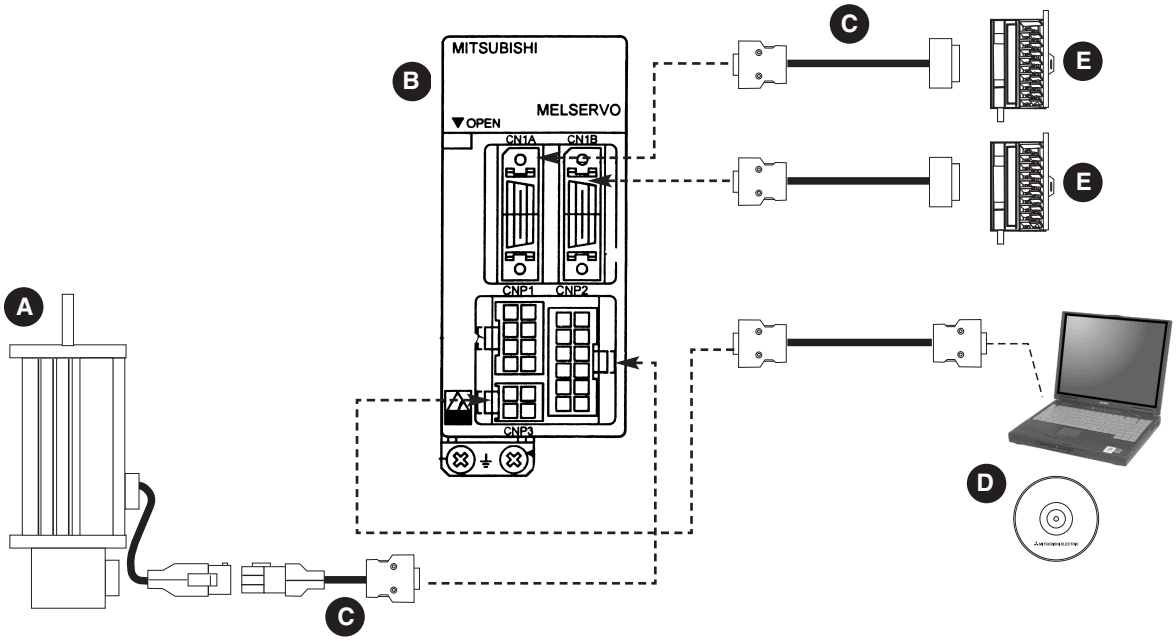
Servo Motor Model	Variable Dimensions		
	R	QK	S
HF-KE13D	25 (0.98)	20.5 (0.81)	8h (0.32)



Unit of Measure: mm (in)

MR-J2-JR Servomotors and Amplifiers

The ultimate servo system using the latest in servo technology operating at 24VDC input with: patented Real-Time Adaptive Tuning; RS-232C serial interface for Windows based set-up speed, positioning, and torque modes; low acoustic noise and a built-in parameter unit.



A. Motor 73
B. Amplifier 74
C. Cables 74
D. Software and Manuals 74
E. Optional Accessories 74

Ⓐ MR-J2-JR Servomotors

Servomotor Selection

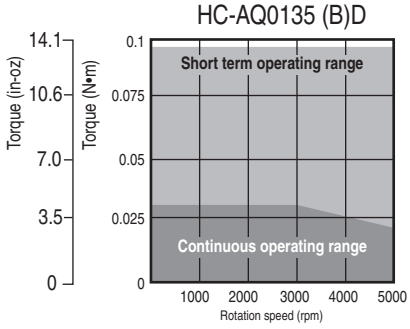
HC-AQ0□35□D

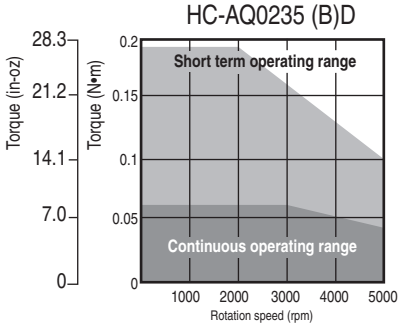
Symbol	Description
1	10 Watts
2	20 Watts
3	30 Watts

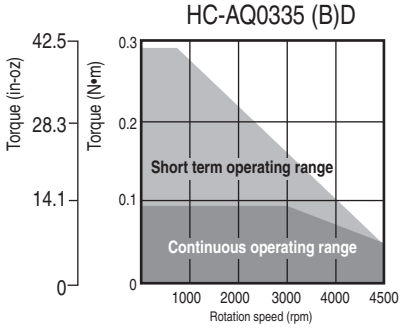
Symbol	Description
None	No brake installed
B	With an electromagnetic brake installed

Item		Servomotor	HC-AQ0135	HC-AQ0235	HC-AQ0335
Stocked Item			–	–	S (Non-B only)
Continuous Characteristics (*1, *2)	Rated Output	kW	0.01	0.02	0.03
	Rated Torque	N · m (oz · in)	0.0318 (4.503)	0.0637 (9.021)	0.0955 (13.524)
Rated Speed (*1)		r/min	3000		
Maximum Speed		r/min	5000		4500
Instantaneous Permissible Speed		r/min	5750		5175
Maximum Torque		N · m (oz · in)	0.0955 (13.524)	0.191 (27.048)	0.287 (40.643)
Power at Continuous Rated Torque		kW/s	2.0	5.6	9.7
Inertia Moment (*4)		J [x 10^{4}kg · m^{2}]	0.0050	0.0072	0.0094
		WK² [oz · in²]	0.027	0.039	0.051
Recommended Ratio of Load Inertia Moment to Servo Motor Shaft Inertia Moment			30 times or less		
Power Supply Capacity			Refer to "Power supply capacity and generated loss of servo amplifier" in the Servo Amplifier Instruction Manual		
Rated Current (Maximum Current)		A	2.4 (7.7)	2.4 (7.7)	2.3 (7.4)
Speed/Position Detector			Encoder (resolution: 8192 pulses/rev)		
Accessory			Encoder		
Insulation Class			Class B		
Structure			Totally-enclosed self-cooling (protection type: IP55 (*6))		
Environmental Conditions (*5)			Refer to Section 2.1 in the Servo Motor Instruction Manual		
Weight (*3)	kg (lb)		0.19 (0.419)	0.22 (0.485)	0.25 (0.551)

Notes:
1. When the power supply voltage drops, we cannot guarantee the output and rated speed.
2. 80% ED at low noise.
   80% ED: Indicates the condition in which operation time at read torque accounts for 80% and the other no load time accounts for 20% in a single operation cycle.
3. When the servo motor is equipped with reduction gear or electromagnetic brake, refer to the corresponding outline dimension drawing. For the EN Standard and UL/cUL Standard compliant models, please contact Mitsubishi.
4. If the load inertia moment ratio exceeds the indicated value, please contact Mitsubishi.
5. When the equipment is to be used in places where it is subjected to oil and/or water, such as on machine field sites, optional features apply to the equipment.
6. Except for the shaft-through portion and connector end.







B MR-J2-JR Amplifiers

Amplifier Selection

MR-J2-03□5

Symbol	Description
A	Analog Speed, Analog Torque and Pulse Train Position
B	SSCNET high speed serial network
C	Built-in motion control (point table)

Item \ Servo Amplifier				MR-J2-03A5	MR-J2-03B5	MR-J2-03C5
Stocked Item				S	–	–
Circuit Power Supply (Note)	Voltage			21.6 to 30VDC (instantaneous permissible voltage 34V)		
	Power Supply Capacity	HC-AQ0135D		Continuous 0.8A, Max. 2.4A		
		HC-AQ0235D		Continuous 1.6A, Max. 4.8A		
		HC-AQ0335D		Continuous 2.4A, Max. 7.2A		
Control Circuit Power Supply (Note)				24VDC+10% 200mA (400mA when using the servo motor equipped with electromagnetic brake)		
System				Sine-wave PWM control, current control system		
Dynamic Brake				Built-in		
Protective Functions				Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off, (electronic thermal relay), servo motor overheat protection, encoder fault protection, undervoltage, instantaneous power failure protection, overspeed protection, excessive error protection		
Speed Frequency Response				250Hz or more		
Structure				Open (IP00)		
Environment	Ambient Temperature	Operation	°C (°F)	0 to +55 (non-freezing) (32 to +131 (non-freezing))		
		Storage	°C (°F)	-20 to +65 (non-freezing) (-4 to +149 (non-freezing))		
	Ambient Humidity	Operation (Storage)		90%RH or less (non-condensing)		
	Atmosphere			Indoors (no direct sunlight), Free from corrosive gas, flammable gas, oil mist, dust and dirt		
	Altitude			Max. 1000m (3280 ft) above sea level		
	Vibration	m/s^2 (ft/s^2)		5.9 or less (19.4 or less)		
Weight	kg (lb)			0.2 (0.44)		

Note: To comply with the low voltage directive, use a reinforced insulation stabilizing power supply.

C Cables

Motor Type	Power/Encoder Cable Length	Power/Encoder Cable Model Number	Stocked Item
HC-AQ0135D or HC-AQ0135BD	2 Meter	MR-JRCBL2M-H	S
HC-AQ0135D or HC-AQ0135BD	5 Meter	MR-JRCBL5M-H	–
HC-AQ0135D or HC-AQ0135BD	10 Meter	MR-JRCBL10M-H	–
HC-AQ0235D or HC-AQ0235BD	2 Meter	MR-JRCBL2M-H	S
HC-AQ0235D or HC-AQ0235BD	5 Meter	MR-JRCBL5M-H	–
HC-AQ0235D or HC-AQ0235BD	10 Meter	MR-JRCBL10M-H	–
HC-AQ0335D or HC-AQ0335BD	2 Meter	MR-JRCBL2M-H	S
HC-AQ0335D or HC-AQ0335BD	5 Meter	MR-JRCBL5M-H	–
HC-AQ0335D or HC-AQ0335BD	10 Meter	MR-JRCBL10M-H	–

D Software

Description	Model Number	Stocked Item
Windows Communication Software	MR-CONFIGURATOR	S
Communication Cable	MR-JRPCATCBL3M	S

Manuals

Description	Model Number	Stocked Item
MR-J2-03A5 Instruction Manual	SH(NA)3200	–
MR-J2-03B5 Instruction Manual	SH(NA)030005	–
MR-J2-03C5 Instruction Manual	SH(NA)3209	–
ServoMotor Instruction Manual	SH(NA)3181	–

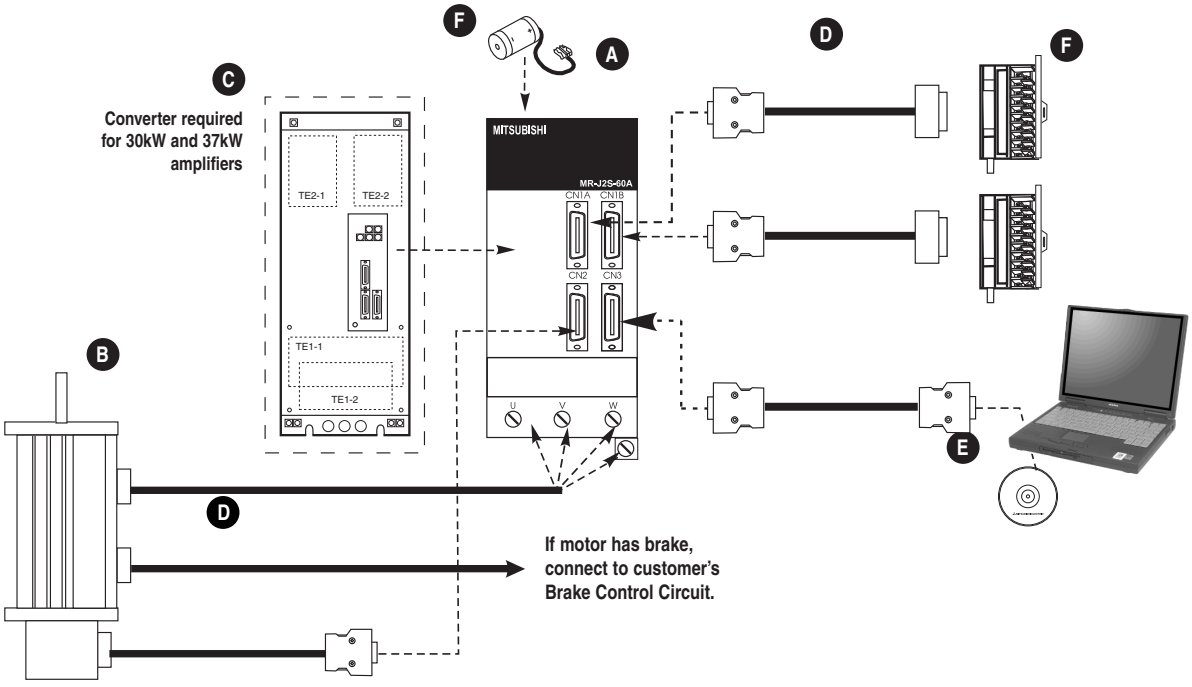
Note: Many of these manuals are available for free download from our website, www.meau.com

E System Options

Description	Model Number	Stocked Item
Terminal Block	MR-TB20	S
Terminal Block Cable 0.5 Meter	MR-J2TBL05M	S
Terminal Block Cable 1.0 Meter	MR-J2TBL1M	S
Encoder Connector Kit (instead of MR-JRCBL□M-H Cable)	MR-JRCNM	–
CN1-I/O Connector Kit (contains 2 connectors, one each for CN1A & CN1B)	MR-J2CN1	S
CN1-I/O Pigtail Cables (one each optional for CN1A & CN1B)	MR-CCN1CBL-3M (3m length) MR-CCN1CBL-5M (5m length)	S

MR-J2S Servomotors and Amplifiers 200~230VAC

Now even higher performance with the MR-J2S: motor with 131,072 pulses per revolution encoder, higher frequency response to 550 Hz and the capability to accept pulse commands up to 500 kHz along with patented Real-Time Adaptive Tuning; RS-232C serial interface for Windows based set-up; absolute positioning; speed, positioning, and torque modes; low acoustic noise; and a built-in parameter unit.



A. Amplifier 76
B. Motor 78
C. Converter (Required for 30kW and 37kW amplifiers) 89
D. Cables 89
E. Software and Manuals 91
F. Optional Accessories 92

Ⓐ MR-J2S Amplifiers

Servo Amplifier Type *2	Interface						Control Mode					Setup S/W	Model	Power Supply Spe.	Capacity (kW) *1	Compatible Motor Series					
	Pulse Train	Analog	DIO	SSCNET	RS-422 Multi-Drop	CC-Link	Position	Speed	Torque	Positioning Function	Fully Closed Loop Control Compatible					HC-KFS	HC-MFS	HC-SFS	HC-RFS	HA-LFS	HC-UFS
General-Purpose Interface MR-J2S-☐A	●	●	●		●		●	●	●		○ *3	●	MR-J2S-☐A	3-phase 200VAC	0.05 to 37	●	●	●	●	●	●
													MR-J2S-☐A1	1-phase 100VAC	0.05 to 0.4	●	●				●
													MR-J2S-☐A4	3-phase 400VAC	0.5 to 55			●		●	
SSCNET, High-Speed Serial Bus Compatible MR-J2S-☐B			●	●			●				○ *3	●	MR-J2S-☐B	3-phase 200VAC	0.05 to 37	●	●	●	●	●	●
													MR-J2S-☐B1	1-phase 100VAC	0.05 to 0.4	●	●				●
													MR-J2S-☐B4	3-phase 400VAC	0.5 to 55			●		●	
With Built-In Positioning Function MR-J2S-☐CP	● *4	● *6	●		●	○ *5				●		●	MR-J2S-☐CP	3-phase 200VAC	0.05 to 7	●	●	●	●	●	●
													MR-J2S-☐CP1	1-phase 100VAC	0.05 to 0.4	●	●				●
With Built-In Program Operation Function MR-J2S-☐CL	● -4	● *6	●		●					●		●	MR-J2S-☐CL	3-phase 200VAC	0.05 to 7	●	●	●	●	●	●
													MR-J2S-☐CL1	1-phase 100VAC	0.05 to 0.4	●	●				●

Notes:
1. The capacity selection software (MSIZE2) can be obtained for free. Contact Mitsubishi for details.
2. ● indicates compliance with standard parts. ○ indicates compliance with special parts.
3. For further details of the fully closed loop control compatible servo amplifier, refer to "Fully Closed Loop Control Compatible INSTRUCTION MANUAL".
4. Use the manual pulse generator (MR-HDP01).
5. Compatible with MR-J2S-☐CP-S084.
6. This ● indicates "Override" and "Analog torque limit" command.

Amplifier Selection:

MR-J2S-□ □ □ □

- **Conforms to following standards: EN, UL, cUL**

Symbol	Description
A	General purpose interface (analog speed, analog torque, pulse train)
B	SSCNET
CP	Motion point table
CL	Motion program

Note: CP & CL available up to MR-J2S-700□

Symbol	Description
None	Standard specification
-S084	CC-Link for CP Type only*
-Sxxx	Special specifications

* Must use CC-Link Interface Module MR-J2S-T01 for CC-Link communication

Symbol	Power Supply
None	3-phase 200V AC or 1-phase 230V AC *
1	1-phase AC 100V **

* Only servo-amplifier for MR-J2S-70□ or less.
** Only servo-amplifier for MR-J2S-40□ or less.

	Compatible Motor Model					
Symbol	HC-MFS	HC-KFS	HC-SFS	HC-RFS	HC-UFS	HA-LFS
10	053, 13	053, 13	—	—	13	—
20	23	23	—	—	23	—
40	43	43	—	—	43	—
60	—	—	52, 53	—	—	—
70	73	73	—	—	72, 73	—
100	—	—	81, 102, 103	—	—	—
200	—	—	121, 201, 152, 202, 153, 203	103, 153	152	—
350	—	—	301, 352, 353	203	202	—
500	—	—	502	353, 503	352, 502	502
700	—	—	702	—	—	601, 701, 702
11K	—	—	—	—	—	801, 12K1, 11K1M, 11K2
15K	—	—	—	—	—	15K1, 15K1M, 15K2
22K	—	—	—	—	—	20K1, 25K1, 22K1M, 22K2
30K	—	—	—	—	—	30K2
37K	—	—	—	—	—	37K2

Stocked Amplifiers 200V

Model Number
MR-J2S-10A
MR-J2S-10A1
MR-J2S-10B
MR-J2S-10B1
MR-J2S-10CL1
MR-J2S-10CP
MR-J2S-10CP1
MR-J2S-10CP1-S084
MR-J2S-10CP-S084
MR-J2S-20A
MR-J2S-20A1
MR-J2S-20B
MR-J2S-20B1
MR-J2S-20CL
MR-J2S-20CL1
MR-J2S-20CP
MR-J2S-20CP1
MR-J2S-20CP-S084
MR-J2S-40A
MR-J2S-40A1
MR-J2S-40B
MR-J2S-40B1
MR-J2S-40CL
MR-J2S-40CL1
MR-J2S-40CP
MR-J2S-40CP1
MR-J2S-40CP-S084
MR-J2S-60A
MR-J2S-60A-PY091
MR-J2S-60B
MR-J2S-60CL
MR-J2S-60CP
MR-J2S-60CP-S084
MR-J2S-70A

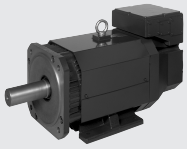
Model Number
MR-J2S-70B
MR-J2S-70CL
MR-J2S-70CP
MR-J2S-70CP-S084
MR-J2S-100A
MR-J2S-100B
MR-J2S-100CL
MR-J2S-100CP
MR-J2S-100CP-S084
MR-J2S-200A
MR-J2S-200B
MR-J2S-200CL
MR-J2S-200CP
MR-J2S-200CP-S084
MR-J2S-350A
MR-J2S-350B
MR-J2S-350CL
MR-J2S-350CP
MR-J2S-350CP-S084
MR-J2S-500A
MR-J2S-500B
MR-J2S-500CL
MR-J2S-500CP
MR-J2S-500CP-S084
MR-J2S-700A
MR-J2S-700B
MR-J2S-700CL
MR-J2S-700CP
MR-J2S-700CP-S084
MR-J2S-11KA
MR-J2S-11KB
MR-J2S-15KA
MR-J2S-15KB
MR-J2S-22KA

Servo Amplifier Model MR-J2S-□□□□		10A/B/ CP/CL	20A/B/ CP/CL	40A/B/ CP/CL	60A/B/ CP/CL	70A/B/ CP/CL	100A/B/ CP/CL	200A/B/ CP/CL	350A/B/ CP/CL	500A/B/ CP/CL	700A/B/ CP/CL	11KA/B	15KA/B	22KA/B	30KA/B	37KA/B	10A1/B1 CP1/CL1	20A1/B1 CP1/CL1	40A1/B1 CP1/CL1
Power Supply	Voltage/ Frequency (*1)	3-phase 200 to 230V AC 50/60Hz or 1-phase 230V AC 50/60Hz (*2)					3-phase 200 to 230V AC 50/60Hz (*2)					3-phase 200 to 230V AC 50/60Hz (*3)					1-phase 100 to 120V AC 50/60Hz		
	Permissible Volt. Fluctuation	3-phase 170 to 253V AC 50/60Hz or 1-phase 207 to 253V AC 50/60Hz					3-phase 170 to 253V AC 50/60Hz					3-phase 170 to 253V AC 50/60Hz					1-phase 85 to 127V AC 50/60Hz		
	Permissible Freq. Fluctuation	±5% max.																	
Control System		Sine-wave PWM control/current control system																	
Dynamic Brake		Built-in										External Option					Built-in		
Speed Frequency Response		550Hz or more																	
Safety Features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servomotor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection																	
Maximum Command Input at the Position Control		Approximately 10M pps																	
Structure		Self-cooling, open (IP00)					Fan cooling, open (IP00)					Fan cooling, open (IP00)					Self-cooling, open (IP00)		
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)																	
	Ambient Humidity	90% RH max. (non-condensing), storage: 90% RH max. (non-condensing)																	
	Atmosphere	Inside control panel; no corrosive gas, inflammable gas, oil mist, or dust																	
	Elevation	1000 meters or less above sea level																	
	Oscillation	5.9 m/s² max.																	
Weight kg (lb)		0.7 (1.5)	0.7 (1.5)	1.1 (2.4)	1.1 (2.4)	1.7 (3.7)	1.7 (3.7)	2.0 (4.4)	2.0 (4.4)	4.9 (10.8)	7.2 (15.87)	16 (35.3)	16 (35.3)	20 (44.1)	47 (103.6)	47 (103.6)	0.7 (1.5)	0.7 (1.5)	1.1 (2.4)

Notes:

1. Rated output capacity and rated speed of the servomotor used in combination with the servo-amp are as indicated when using the power-supply voltage and frequency listed. The output capacity and speed cannot be guaranteed when the power-supply voltage is less than specified.
2. When combined with a servomotor, torque characteristics are those in the case of 3-Phase 200~230V AC or 1-Phase 230V AC.
3. 30 and 37 kW amplifiers require separate converter unit MR-HP30KA.

Ⓑ MR-J2S Servomotors

	Motor Series	Rated Speed (Maximum Speed) (r/min)	Rated Output (kW)	Servomotor Type (*1)	Overseas Standards (*1)		Protective Degree (* 2)	Feature	Application Examples
				With Electro-Magnetic Brake (B)	EN	UL, cUL			
Small Capacity Series	**HC-KFS Series**	3000 (4500)	5 types 0.05, 0.1, 0.2, 0.4, 0.75	●	●	●	IP55 Excluding the shaft-through portion and connector (IP65 *3)	**Low inertia** Perfect for general industrial machines. High velocity motors, 6000 or 10000r/min, have been prepared.	Belt drive Robots Mounters Sewing machines X-Y tables Food processing machines Semiconductor manufacturing devices Knitting and embroidery machines
		6000 (6000)	1 type 0.4	—	●	●	IP55 Excluding the shaft-through portion and connector		
		10000 (10000)	1 type 0.4	—	●	●			
	HC-MFS Series	3000 (4500)	5 types 0.05, 0.1, 0.2, 0.4, 0.75	●	●	●	IP55 Excluding the shaft-through portion and connector (IP65 *3)	**Ultra-low inertia** Well suited for high-frequency operation.	Inserters Mounters
Medium Capacity Series	**HC-SFS Series**	1000 (1500 : 0.85kW, 1200 : 1.2~3kW)	4 types 0.85, 1.2, 2.0, 3.0	●	●	●	IP65 (IP67)	**Medium inertia** Suitable for variable applications three models from low to high-speed are available.	Conveyor machines Robots X-Y tables
		2000 (3000 : 0.5~1.5kW, 2500 : 2, 3.5kW, 2000 : 5, 7kW)	14 types 0.5, 1.0, 1.5, 2.0, 3.5, 5.0, 7.0 / 0.5, 1.0, 1.5, 2.0, 3.5, 5.0, 7.0 (*5)	●	●	●	IP65 (IP67)		
		3000 (3000)	5 types 0.5, 1.0, 1.5, 2.0, 3.5	●	●	●	IP65 (IP67)		
	HC-RFS Series	3000 (4500)	5 types 1.0, 1.5, 2.0, 3.5, 5.0	●	●	●	IP65 (IP67)	**Ultra-low inertia** Well suited for high-frequency operation.	Ultra-high-frequency conveyor machines
Medium/Large Capacity Series	**HA-LFS Series** 	1000 (1200)	15 types 6.0, 8.0, 12, 15, 20, 25, 30, 37 / 8.0, 12, 15, 20, 25 (* 7) 30, 37 (*5)	● (For only 6.0kW to 12kW)	●	●	IP44	**Low inertia** Suitable for variable applications three models from low to medium-speed are available. As a standard, 30kW and larger capacities are compatible with flange mounting or foot mounting. (* 6)	Injection molding machines Semiconductor manufacturing devices Large conveyor machines
		1500 (2000)	13 types 7.0, 11, 15, 22, 30, 37 / 11, 15, 22, 30, 37, 45, 50 (*5)	● (For only 7.0kW to 15kW)	●	●	IP44		
		2000 (2000)	14 types 5.0, 7.0, 11, 15, 22, 30, 37 / 11, 15, 22, 30, 37, 45, 55 (*5)	● (For only 11kW to 22kW)	●	●	IP44 IP65 for HA-LFS502 or HA-LFS702		
Flat Small/Medium Capacity Series	**HC-UFS Series**	2000 (3000 : 0.75~2kW, 2500 : 3.5, 5kW)	5 types 0.75, 1.5, 2.0, 3.5, 5.0	●	●	●	IP65 (IP67)	**Flat Type** The flat design makes this unit well suited for situations where the installation space is restricted.	Robots Food processing machines
		3000 (4500)	4 types 0.1, 0.2, 0.4, 0.75	●	●	●	IP65 Excluding the connector (* 4)		

Notes:
1. A ● mark shows production range.
2. Compliance is possible with special products for items inside ( ) of the protective degree. Consult Mitsubishi for details.
3. Motor capacity 50W is excluded.
4. IP65-compliant product (HC-UFS□-S1) including connector components have been prepared.
5. Shaded entries are for 400V type.
6. Some motors from 15kW to 25kW capacities can be foot-mount style. Refer to "Motor Dimensions" shown in this catalog.
7. The HA-LFS 1000r/min 400V 8.0 to 25kW capacities are special-order products. Contact Mitsubishi for details on the delivery schedule.

MR-J2S Servomotor Selection:

HC - □ FS □ □ □ □

Symbol	Motor Series
M	Ultra-low inertia, small capacity
K	Low inertia, small capacity
S	Medium inertia, medium capacity
R	Low inertia, medium capacity
U	Low profile type, small-medium capacity

Symbol	Electromagnetic Brake
None	—
B	Installed

Symbol	Shaft
None	Special Order
K	Keyway (*1) (Standard)
D	D-cut (*2) (Special Order)

Notes:
1. Key not available for HC-KFS, HC-MFS and HC-UFS (3000 r/min) models under 200W.
2. The D-cut is available only for the HC-KFS, HC-MFS and HC-UFS models of 100W or less.

• Conforms to following standards: EN, UL, cUL

131072 pulse p/rev encoder for use in absolute and incremental systems (serial encoder)

Symbol	Rated Output Capacity (kW)*
05	0.05
1 to 8	0.1 to 0.85
10 to 70	1.0 to 7.0

* Check specifications for all available motor size capabilities.

Symbol	Rated Speed (r/min)
1	1000
2	2000
3	3000

Stocked Motors

Model Number
HC-KFS053
HC-KFS13
HC-KFS13B
HC-KFS23K
HC-KFS23BK
HC-KFS43K
HC-KFS43BK
HC-KFS73K
HC-KFS73BK

Model Number
HC-MFS053
HC-MFS13
HC-MFS13B
HC-MFS23K
HC-MFS23BK
HC-MFS43K
HC-MFS43BK
HC-MFS73K
HC-MFS73BK

Model Number
HC-RFS103K
HC-RFS103BK
HC-RFS153K
HC-RFS353K
HC-RFS353BK
HC-RFS503K

Model Number
HC-SFS52K
HC-SFS52BK
HC-SFS102K
HC-SFS102BK
HC-SFS152K
HC-SFS152BK
HC-SFS153K
HC-SFS202K
HC-SFS202BK
HC-SFS301K
HC-SFS352K
HC-SFS352BK
HC-SFS353K
HC-SFS502K
HC-SFS502BK
HC-SFS702K
HC-SFS702BK

Model Number
HC-UFS13
HC-UFS23K
HC-UFS23BK
HC-UFS43K
HC-UFS72BK
HC-UFS73BK
HC-UFS73K
HC-UFS152K
HC-UFS152BK
HC-UFS202K
HC-UFS202BK
HC-UFS352K
HC-UFS352BK
HC-UFS502K
HC-UFS502BK

MR-J2S Servomotor Selection:

HA - LFS □ □ □ □

131072 pulse p/rev encoder for use in absolute and incremental systems (serial encoder)

Symbol	Rated Output Capacity (kW)*
50 to 80	5 to 8
11k to 37k	11 to 37

Symbol	Electromagnetic Brake
None	—
B	Installed

• Conforms to following standards: EN, UL, cUL

Symbol	Rated Speed (r/min)
1	1000
1M	1500
2	2000

* The HA-LFS 1000 r/min 8.0 to 25 kW capacities are special-order products

Symbol	Shaft
None	Straight
K	Keyway (Standard)

Stocked Motors

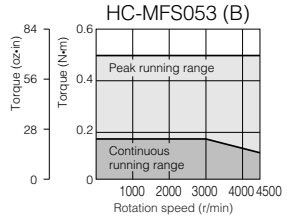
Model Number
HA-LFS11K2K
HA-LFS11K2BK
HA-LFS15K2K
HA-LFS15K2BK
HA-LFS22K2K
HA-LFS22K2BK

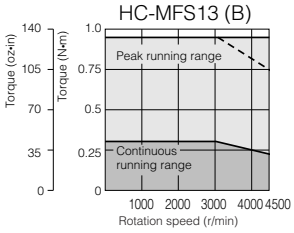
MR-J2S HC-MFS Series Servomotor Specifications

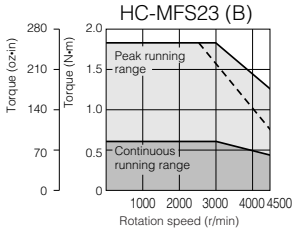
Servomotor Series		HC-MFS Series				
Models / Specifications	Servomotor Model HC-	MFS053(B)	MFS13(B)	MFS23(B)	MFS43(B)	MFS73(B)
	Servo-Amp Model MR-	J2S-10A/A1/B/B1/ CP/CP1/CL/CL1		J2S-20A/A1/B/B1/ CP/CP1/CL/CL1	J2S-40A/A1/B/B1/ CP/CP1/CL/CL1	J2S-70A/B/CP/CL
Power Facility Capacity (kVA) (*2)		0.3	0.3	0.5	0.9	1.3
Continuous Running Duty	Rated Output (W)	50	100	200	400	750
	Rated Torque (N·m [oz·in])	0.16 (22.7)	0.32 (45.3)	0.64 (90.6)	1.3 (184.1)	2.4 (339.8)
Maximum Torque (N·m [oz·in])		0.48 (68.0)	0.95 (134.5)	1.9 (269.0)	3.8 (538.1)	7.2 (1019.5)
Rated Rotation Speed (r/min)		3000				
Maximum Rotation Speed (r/min)		4500				
Permissible Instantaneous Rotation Speed (r/min)		5175				
Power Rate at Continuous Rated Torque (kW/s)		13.47	34.13	46.02	116.55	94.43
Rated Current (A)		0.85	0.85	1.5	2.8	5.1
Maximum Current (A)		2.6	2.6	5.0	9.0	18
Regeneration Braking Frequency (times/min) (*3)	With No Options	(*4)	(*4)	(*4)	1010	400
	MR-RB032 (30W)	(*4)	(*4)	(*4)	3000	600
	MR-RB12 (100W)	–	–	(*4)	(*4)	2400
Moment of Inertia J ($\times 10^{-4}$ kg·m^2) [WK^2 (oz·in^2)]	Standard	0.019 (0.104)	0.03 (0.164)	0.088 (0.481)	0.143 (0.782)	0.6 (3.28)
	With Electromagnetic Brake	0.022 (0.12)	0.032 (0.175)	0.136 (0.744)	0.191 (1.044)	0.725 (3.964)
Recommended Load/Motor Inertia Moment Ratio		Less than 30-times the servomotor's inertia moment (*5)				
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev				
Attachments		17 bit encoder				
Structure		Totally enclosed non-ventilated (protection degree: IP55) (*6)				
Environment (*1)	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: –15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH max. (non-condensing), storage: 90% RH max. (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist, or dust				
	Elevation/Vibration (*7)	1000 meters or less above sea level; X, Y: 49 m/s^2				
Weight kg (lb)	Standard	0.4 (0.88)	0.53 (1.17)	0.99 (2.18)	1.45 (3.20)	3.0 (6.61)
	With Electromagnetic Brake	0.75 (1.65)	0.89 (1.96)	1.6 (3.53)	2.1 (4.63)	4.0 (8.82)

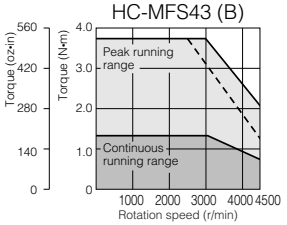
Notes:

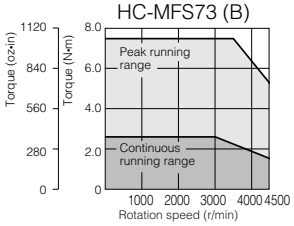
1. If used in location such as actual site of machinery where oil or water may contact the product, special specifications apply, contact Mitsubishi Electric.
2. The power facility capacity varies depending on the power supply's impedance.
3. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
4. There are no limits on regeneration frequency as long as the effective torque is within the rated torque range. However, the load/motor of inertia ratio must be 30 times or less.
5. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the figure in the table.
6. The shaft-through portion and connector for cable terminal are excluded.
7. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.











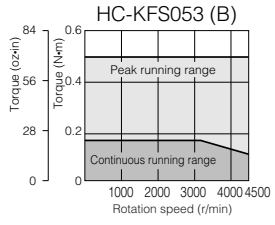
※Remarks:
1. Solid lines show torque characteristics for 3-phase 200-230V operation.
2. Torque characteristics are same for single-phase 230V operation.
3. For single-phase 100V operation, torque characteristics that are different from above-mentioned 1 and 2, are shown in broken lines.

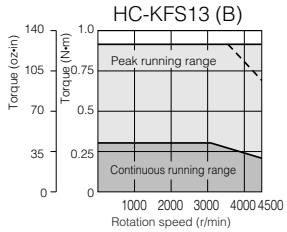
MR-J2S HC-KFS Series Servomotor Specifications

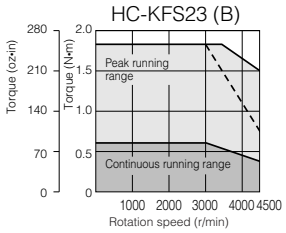
Servomotor Series		HC-KFS Series				
Models / Specifications	Servomotor Model HC-	KFS053(B)	KFS13(B)	KFS23(B)	KFS43(B)	KFS73(B)
	Servo-Amp Model MR-	J2S-10A/A1/B/B1/ CP/CP1/CL/CL1		J2S-20A/A1/B/B1/ CP/CP1/CL/CL1	J2S-40A/A1/B/B1/ CP/CP1/CL/CL1	J2S-70A/B/CP/CL
Power Facility Capacity (kVA) (*2)		0.3	0.3	0.5	0.9	1.3
Continuous Running Duty	Rated Output (W)	50	100	200	400	750
	Rated Torque (N·m [oz·in])	0.16 (22.7)	0.32 (45.3)	0.64 (90.6)	1.3 (184.1)	2.4 (340)
Maximum Torque (N·m [oz·in])		0.48 (68.0)	0.95 (134.5)	1.9 (269.0)	3.8 (538.1)	7.2 (1020)
Rated Rotation Speed (r/min)		3000				
Maximum Rotation Speed (r/min)		4500				
Permissible Instantaneous Rotation Speed (r/min)		5175				
Power Rate at Continuous Rated Torque (kW/s)		4.78	12.1	9.65	24.2	37.7
Rated Current (A)		0.83	0.71	1.1	2.3	5.8
Maximum Current (A)		2.5	2.2	3.4	6.9	18.6
Regeneration Braking Frequency (times/min) (*3)	With No Options	(*4)	(*4)	(*4)	220	190
	MR-RB032 (30W)	(*4)	(*4)	(*4)	660	280
	MR-RB12 (100W)	—	—	(*4)	2200	940
Moment of Inertia J ($\times 10^{-4}$ kg·m^2) [WK^2 (oz·in^2)]	Standard	0.053 (0.29)	0.084 (0.459)	0.260 (1.422)	0.460 (2.515)	1.51 (8.26)
	With Electromagnetic Brake	0.056 (0.306)	0.087 (0.476)	0.310 (1.695)	0.510 (2.788)	1.635 (8.938)
Recommended Load/Motor Inertia Moment Ratio		Less than 15-times the servomotor's inertia moment (*5)				
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev				
Attachments		17 bit encoder				
Structure		Totally enclosed non-ventilated (protection degree: IP55) (*6)				
Environment (*1)	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH max. (non-condensing), storage: 90% RH max. (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist, or dust				
	Elevation/Vibration (*7)	1000 meters or less above sea level; X: 49m/s^2 Y: 49m/s^2				
Weight kg (lb)	Standard	0.4 (0.88)	0.53 (1.17)	0.99 (2.18)	1.45 (3.20)	3.0 (6.61)
	With Electromagnetic Brake	0.75 (1.65)	0.89 (1.96)	1.6 (3.53)	2.1 (4.63)	4.0 (8.82)

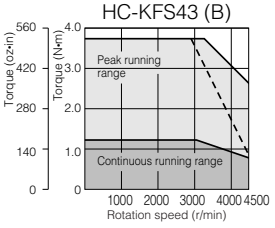
Notes:

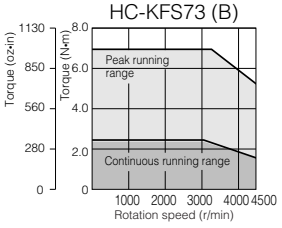
1. If used in location such as actual site of machinery where oil or water may contact the product, special specifications apply, contact Mitsubishi Electric.
2. The power facility capacity varies depending on the power supply's impedance.
3. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (Operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
4. There are no limits on regeneration frequency as long as the effective torque is within the rated torque range. However, the load/motor of inertia ratio must be 15 times or less.
5. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the figure in the table.
6. The shaft-through portion and connector for cable terminal are excluded.
7. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.









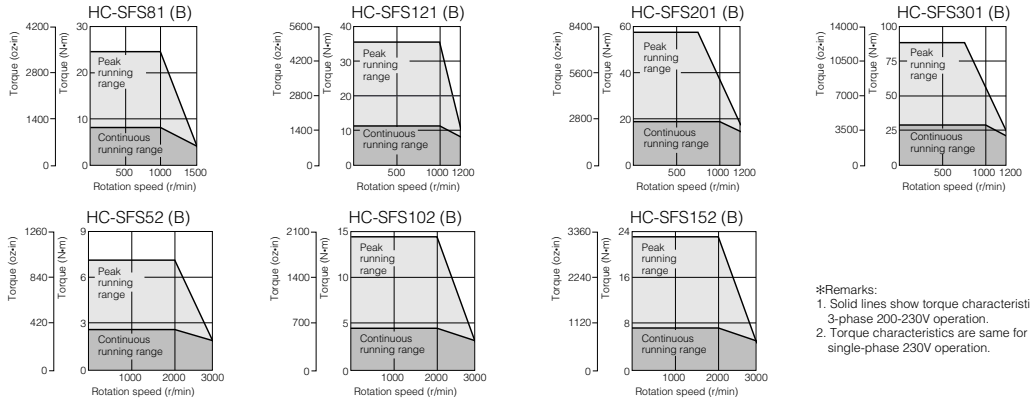


✻Remarks:
1. Solid lines show torque characteristics for 3-phase 200-230V operation.
2. Torque characteristics are same for single-phase 230V operation.
3. For single-phase 100V operation, torque characteristics that are different from above-mentioned 1 and 2, are shown in broken lines.

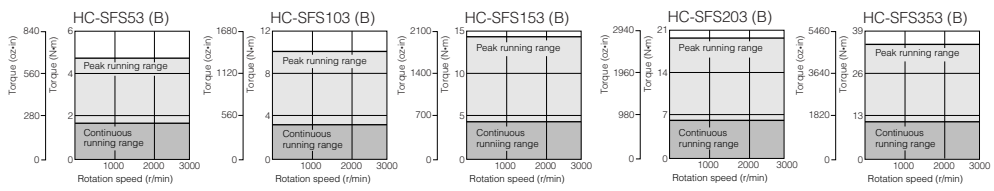
MR-J2S HC-SFS Series Servomotor Specifications

Servomotor Series		HC-SFS 1000				HC-SFS 2000						
Models / Specifications	Servomotor Model HC-	SFS81(B)	SFS121(B)	SFS201(B)	SFS301(B)	SFS52(B)	SFS102(B)	SFS152(B)	SFS202(B)	SFS352(B)	SFS502(B)	SFS702(B)
	Servo-Amp Model MR-	J2S-100A/ B/CP/CL	J2S-200A/ B/CP/CL	J2S-200A/ B/CP/CL	J2S-350A/ B/CP/CL	J2S-60A/ B/CP/CL	J2S-100A/ B/CP/CL	J2S-200A/ B/CP/CL	J2S-200A/ B/CP/CL	J2S-350A/ B/CP/CL	J2S-500A/ B/CP/CL	J2S-700A/ B/CP/CL
Power Facility Capacity (kVA) (*1)		1.5	2.1	3.5	4.8	1.0	1.7	2.5	3.5	5.5	7.5	10.0
Continuous Running Duty	Rated Output (kW)	0.85	1.2	2.0	3.0	0.5	1.0	1.5	2.0	3.5	5.0	7.0
	Rated Torque (N·m [oz·in])	8.12 (1149.8)	11.5 (1628.4)	19.1 (2704.5)	28.6 (4049.4)	2.39 (338.4)	4.78 (676.8)	7.16 (1013.8)	9.55 (1352.3)	16.7 (2364.7)	23.9 (3384.5)	33.4 (4729.9)
Maximum Torque (N·m [oz·in])		24.4 (3455.0)	34.4 (4871.0)	57.3 (8113.5)	85.9 (12163.2)	7.16 (1013.8)	14.4 (2039.0)	21.6 (3058.5)	28.5 (4035.5)	50.1 (7094.0)	71.6 (10139.4)	100 (14161.2)
Rated Rotation Speed (r/min)		1000				2000						
Maximum Rotation Speed (r/min)		1500	1200			3000			2500		2000	
Permissible Instantaneous Rotation Speed (r/min)		1725	1380			3450			2850		2300	
Power Rate at Continuous Rated Torque (kW/s)		32.9	30.9	44.5	81.3	8.7	16.7	25.6	21.5	34.1	56.5	69.7
Rated Current (A)		5.1	7.1	9.6	16	3.2	6	9	11	17	28	35
Maximum Current (A)		15.3	21.3	28.8	48	9.6	18	27	33	51	84	105
Regeneration Braking Frequency (times/min) (*2)	With No Options	140	240	100	84	56	54	136	64	31	39	32
	MR-RB032 (30W)	220	—	—	—	165	80	—	—	—	—	—
	MR-RB12 (100W)	740	—	—	—	560	270	—	—	—	—	—
	MR-RB32 (300W)	2220	—	—	—	—	810	—	—	—	—	—
	MR-RB30 (300W)	—	730	330	250	—	—	408	192	95	90	—
	MR-RB50 (500W)	—	1216	550	430	—	—	680	320	150	150	—
	MR-RB31 (300W)	—	—	—	—	—	—	—	—	—	—	57
	MR-RB51 (500W)	—	—	—	—	—	—	—	—	—	—	95
Moment of Inertia J (×10−4 kg·m²) [WK² (oz·in²)] (*3)	Standard	20.0 (109.0)	42.5 (232)	82.0 (448)	101 (552)	6.6 (36.1)	13.7 (74.9)	20.0 (109.0)	42.5 (232)	82.0 (448)	101 (552)	160 (875)
	With Electromagnetic Brake	22.0 (120.0)	52.5 (287)	92.0 (503)	111 (607)	8.6 (47.0)	15.7 (85.8)	22.0 (120)	52.5 (287)	92.0 (503)	111 (607)	170 (929)
Recommended Load/Motor Inertia Moment Ratio		Less than 15-times the servomotor's inertia moment (*3)										
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev										
Attachments		17 bit encoder, oil seal										
Structure		Totally enclosed non-ventilated (protection degree: IP65)										
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: –15 to 70°C (5 to 158°F) (non-freezing)										
	Ambient Humidity	80% RH max. (non-condensing), storage: 90% RH max. (non-condensing)										
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist, or dust										
	Elevation	1000 meters or less above sea level										
	Vibration (*4)	X, Y: 24.5m/s²	X: 24.5m/s² Y: 49m/s²		X: 24.5m/s² Y: 29.4m/s²	X, Y: 24.5m/s²			X: 24.5m/s² Y: 49m/s²		X: 24.5m/s² Y: 29.4m/s²	
Weight kg (lb)	Standard	9 (19.8)	12 (26.5)	19 (41.9)	23 (50.7)	5 (11.0)	7 (15.4)	9 (19.8)	12 (26.5)	19 (41.9)	23 (50.7)	32 (70.5)
	With Electromagnetic Brake	11 (24.3)	18 (39.7)	25 (55.1)	29 (63.9)	7 (15.4)	9 (19.8)	11 (24.3)	18 (39.7)	25 (55.1)	29 (63.9)	38 (83.8)

Notes: See next page.



*Remarks:
1. Solid lines show torque characteristics for 3-phase 200-230V operation.
2. Torque characteristics are same for single-phase 230V operation.

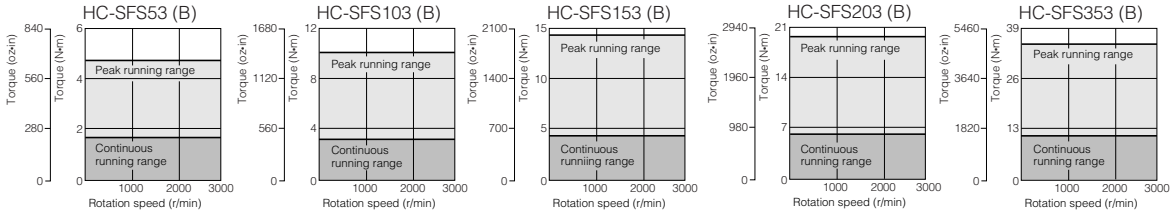


MR-J2S HC-SFS Series Servomotor Specifications

Servomotor Series		HC-SFS 3000 Series				
Models / Specifications	Servomotor Model HC-	SFS53(B)	SFS103(B)	SFS153(B)	SFS203(B)	SFS353(B)
	Servo-Amp Model MR-	J2S-60A/B/CP/CL	J2S-100A/B/CP/CL	J2S-200A/B/CP/CL	J2S-200A/B/CP/CL	J2S-350A/B/CP/CL
Power Facility Capacity (kVA) (*1)		1.0	1.7	2.5	3.5	5.5
Continuous Running Duty	Rated Output (kW)	0.5	1.0	1.5	2.0	3.5
	Rated Torque (N·m [oz·in])	1.59 (225.1)	3.18 (450.3)	4.78 (676.8)	6.37 (901.9)	11.1 (1571.6)
Maximum Torque (N·m [oz·in])		4.77 (675.4)	9.55 (1352.3)	14.3 (2024.8)	19.1 (2704.5)	33.4 (4729.3)
Rated Rotation Speed (r/min)		3000				
Maximum Rotation Speed (r/min)		3000				
Permissible Instantaneous Rotation Speed (r/min)		3450				
Power Rate at Continuous Rated Torque (kW/s)		3.8	7.4	11.4	9.5	15.1
Rated Current (A)		3.2	5.3	8.6	10.4	16.4
Maximum Current (A)		9.6	15.9	25.8	31.2	49.2
Regeneration Braking Frequency (times/min) (*2)	With No Options	25	24	82	24	14
	MR-RB032 (30W)	73	36	—	—	—
	MR-RB12 (100W)	250	120	—	—	—
	MR-RB32 (300W)	—	360	—	—	—
	MR-RB30 (300W)	—	—	250	70	42
	MR-RB50 (500W)	—	—	410	110	70
Moment of Inertia J (x10^{-4} kg·m^2) [WK^2 (oz·in^2)] (*3)	Standard	6.6 (36.1)	13.7 (74.9)	20.0 (109)	42.5 (232)	82.0 (448)
	With Electromagnetic Brake	8.6 (47.0)	15.7 (85.8)	22.0 (120)	52.5 (287)	92.0 (503)
Recommended Load/Motor Inertia Moment Ratio		Less than 15-times the servomotor's inertia moment (*3)				
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev				
Attachments		17 bit encoder, oil seal				
Structure		Totally enclosed non-ventilated (protection degree: IP65)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: –15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH max. (non-condensing), storage: 90% RH max. (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist, or dust				
	Elevation	1000 meters or less above sea level				
	Vibration (*4)	X, Y: 24.5m/s^2			X: 24.5m/s^2; Y: 49m/s^2	
Weight kg (lb)	Standard	5 (11)	7 (15.4)	9 (19.8)	12 (26.5)	19 (41.9)
	With Electromagnetic Brake	7 (15.4)	9 (19.8)	11 (24.3)	18 (39.7)	25 (55.1)

Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
3. Contact Mitsubishi Electric if the load/motor of inertia moment ratio exceeds the figure in the table.
4. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.

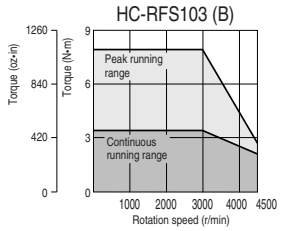


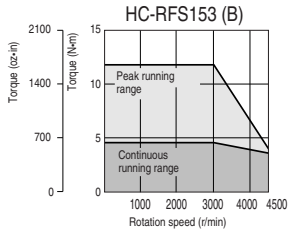
MR-J2S HC-RFS Series Servomotor Specifications

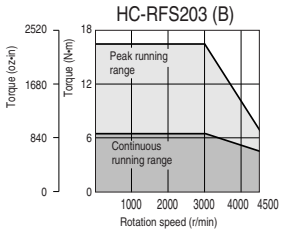
Servomotor Series		HC-RFS Series				
Models / Specifications	Servomotor Model HC-	RFS103(B)	RFS153(B)	RFS203(B)	RFS353(B)	RFS503(B)
	Servo-Amp Model MR-	J2S-200A/B/CP/CL		J2S-350A/B/CP/CL	J2S-500A/B/CP/CL	
Power Facility Capacity (kVA) (*1)		1.7	2.5	3.5	5.5	7.5
Continuous Running Duty	Rated Output (kW)	1.0	1.5	2.0	3.5	5.0
	Rated Torque (N·m [oz·in])	3.18 (450.3)	4.78 (676.8)	6.37 (902.1)	11.1 (1571.9)	15.9 (2251.6)
Maximum Torque (N·m [oz·in])		7.95 (1125.7)	11.9 (1685.0)	15.9 (2251.4)	27.9 (3951.0)	39.7 (5622.0)
Rated Rotation Speed (r/min)		3000				
Maximum Rotation Speed (r/min)		4500				
Permissible Instantaneous Rotation Speed (r/min)		5175				
Power Rate at Continuous Rated Torque (kW/s)		67.4	120	176	150	211
Rated Current (A)		6.1	8.8	14	23	28
Maximum Current (A)		18.4	23.4	37	58	70
Regeneration Braking Frequency (times/min) (*2)	With No Options	1090	860	710	174	125
	MR-RB30 (300W)	3270	2580	2130	401	288
	MR-RB50 (500W)	5450	4300	3550	669	479
Moment of Inertia J ($\times 10^{-4}$ kg·m^2) [WK^2 (oz·in^2)] (*3)	Standard	1.5 (8.20)	1.9 (10.4)	2.3 (12.6)	8.6 (47.0)	12.0 (65.6)
	With Electromagnetic Brake	1.85 (10.1)	2.25 (12.3)	2.65 (14.5)	11.8 (64.5)	15.5 (84.7)
Recommended Load/Moment of Inertia Moment Ratio		Less than 5-times the servomotor's inertia moment (*3)				
Speed/Position Encoder		Resolution per encoder/servomotor rotation: 131072 p/rev				
Attachments		17 bit encoder, oil seal				
Structure		Totally enclosed non-ventilated (protection degree: IP65)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH max. (non-condensing), storage: 90% RH max. (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist, or dust				
	Elevation/Vibration (*4)	1000 meters or less above sea level				
Weight kg (lb)	Standard	3.9 (8.6)	5.0 (11.0)	6.2 (13.7)	12 (26.5)	17 (37.5)
	With Electromagnetic Brake	6.0 (13.2)	7.0 (15.4)	8.3 (18.3)	15 (33.1)	21 (46.3)

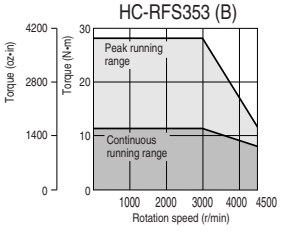
Notes:

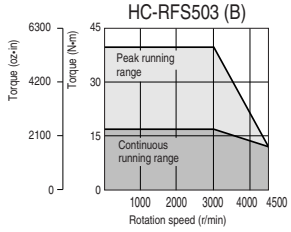
1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (Operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
3. Contact Mitsubishi Electric if the load/motor of inertia ratio exceeds the figure in the table.
4. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.











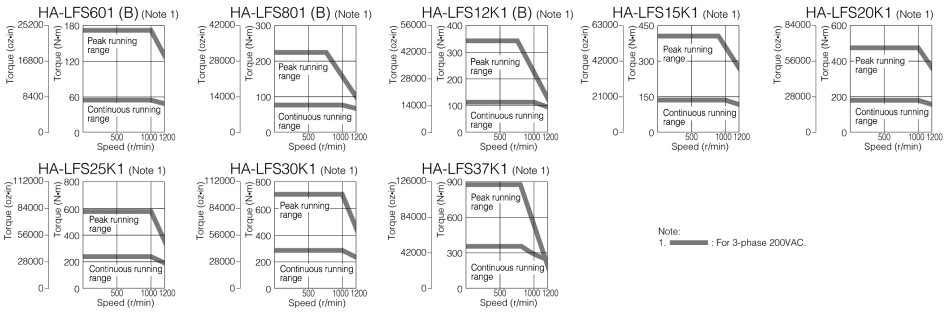
Remarks: Solid lines show torque characteristics for 3-phase 200-230V operation.

MR-J2S HA-LFS 1000 r/min Series Servomotor Specifications (200VAC Type)

Servomotor Series		HA-LFS 1000 r/min Series							
Models	Servomotor Model HA-LFS	601(B)	801(B)	12K1(B)	15K1	20K1	25K1	30K1	37K1 (*1)
	Servo-Amp Model MR-J2S-	700A/B/CP/CL-U058 (*8)	11KA/B (*9)		15KA/B (*9)	22KA/B (*9)		30KA/B (*9)	37KA/B-U039
	Converter Unit Model	—						MR-HP30KA	
Power Facility Capacity kVA (*2)		8.6	12	18	22	30	38	48	59
Continuous Running Duty	Rated Output kW	6.0	8.0	12	15	20	25	30	37 (75% ED)
	Rated Torque (N•m [oz•in])	57.3 (8113.7)	76.4 (10818.2)	115 (16284)	143 (20248.8)	191 (27045.6)	239 (33842.4)	286 (40497.6)	353 (49984.8)
Maximum Torque (N•m [oz•in])		172 (24355.2)	229 (32426.4)	344 (48710.4)	415 (58764)	477 (67543.2)	597 (84535.2)	716 (101385.6)	883 (125032.8)
Rated Speed r/min		1000							
Maximum Speed r/min		1200							
Permissible Instantaneous Speed r/min		1380							
Power Rate at Continuous Rated Torque kW/s		313	265	445	373	561	528	626	668
Rated Current (A)		34	42	61	83	118	118	154	188
Maximum Current (A)		102	126	183	249	295	295	385	470
Regeneration Braking Frequency (times/min) (*3)	With No Options	158	—	—	—	—	—	—	—
	MR-RB31 (300W)	278	—	—	—	—	—	—	—
	MR-RB51 (500W) (*4)	464	—	—	—	—	—	—	—
	GRZG400-2Ω (4) MR-RB65 (800W) (*5)	—	354	264	—	—	—	—	—
	GRZG400-1Ω (5) MR-RB66 (1300W) (*5)	—	—	—	230	—	—	—	—
	GRZG400-0.8Ω (5) MR-RB67 (1300W) (*5)	—	—	—	—	195	117	—	—
	MR-RB139 (1300W)	—	—	—	—	—	—	97	68
	MR-RB137 (3900W)	—	—	—	—	—	—	290	203
Moment of Inertia J (×10^{-4} kg·m^2) [J (oz·in^2)]	Standard	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)	1310 (7161.2)	1870 (10222.5)
	With Electromagnetic Brake	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—	—	—	—
Recommended Load/Motor Inertia Moment Ratio		10-times the servomotor's inertia moment max. (*6)							
Speed/Position Detector		17-bit encoder (Resolution per encoder/servomotor rotation: 131072 p/rev)							
Attachments		Oil seal							
Structure		Totally enclosed ventilated (protection degree: IP44)							
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)							
	Ambient Humidity	80% RH max. (non-condensing), storage 90% RH max. (non-condensing)							
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust							
	Elevation	1000 meters (3280 ft.) or less above sea level							
	Vibration (*7)	X: 11.7 m/s^2 • Y: 29.4 m/s^2			X: 9.8 m/s^2 • Y: 9.8 m/s^2				
Weight kg (lb)	Standard	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)	250 (550.8)	335 (738)
	With Electromagnetic Brake	70 (154.2)	126 (277.6)	146 (321.7)	—	—	—	—	—
Cooling Fan Power	Voltage, Frequency	1-ph 200 - 220 VAC 50/Hz 1-ph 200 - 230 VAC 60/Hz	3-phase 200 to 220VAC 50Hz • 3-phase 200 to 230VAC 60Hz						
	Input (W)	42 (50Hz) / 54 (60Hz)	32 (50Hz) / 40 (60Hz)		45 (50Hz) / 63 (60Hz)		120 (50Hz) / 175 (60Hz)	120 (50Hz) / 175 (60Hz)	
Cooling Fan Rated Current (A)		0.21 (50Hz) / 0.25 (60Hz)	0.30 (50Hz) / 0.25 (60Hz)		0.32 (50Hz) / 0.35 (60Hz)		0.65 (50Hz) / 0.80 (60Hz)	0.65 (50Hz) / 0.80 (60Hz)	

Notes:

1. Make sure that the effective torque is less than 75% of the 37kW capacity during the power factor improvement. Always use a DC reactor (MR-DCL37K).
2. The power facility capacity varies depending on the power supply's impedance.
3. The regenerative brake frequency shows the permissible frequency for decelerating the motor without a load from rated speed to a stop. When a load is connected, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated speed is exceeded, the regenerative brake frequency is inversely proportional to the square of (Operating speed/rated speed). When the operating speed varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
4. Install a cooling fan (approx. 1.0m^3/min, □92).
5. The values apply when the parameter No. 0 (for MR-J2S-A type) or No. 2 (for MR-J2S-B type) is changed, and cooling fans (approx. 1.0m^3/min, □92 x 2 units) are installed. The GRZG400-□Ω is a standard accessory.
6. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
7. The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft.) Fretting of the bearing occurs easily when a motor stops, maintain vibration to approximately one-half of the allowable value).
8. MR-J2S-□CP(1)-S084 is also compatible. The compatible motor is the same as the MR-J2S-□CP(1).
9. The amplifier version software compatible with HA-LFS 1000 r/min is as follows: For 8kW, 12kW, 15kW or 20kW (200V) A type: Version A0 or above; B type: Version A3 or above. For 25kW or 30kW (200V) A type: Version A2 or above; B type: Version A5 or above.

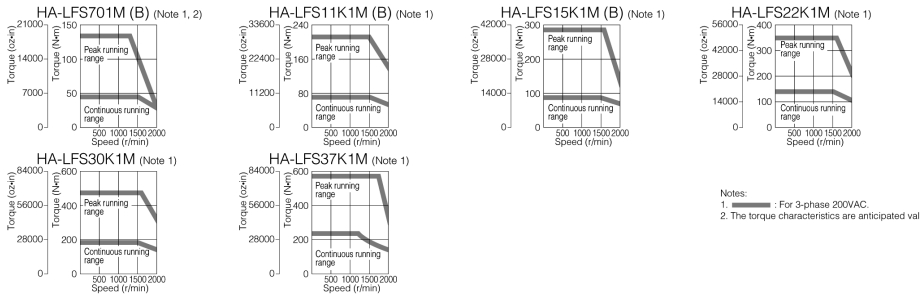


MR-J2S HA-LFS 1500 r/min Series Servomotor Specifications (200VAC Type)

Servomotor Series		HA-LFS 1500 r/min Series					
Models	Servomotor Model HA-LFS	701M(B) (*9)	11K1M(B)	15K1M(B)	22K1M	30K1M	37K1M (*1)
	Servo-Amp Model MR-J2S-	700A/B/CP/CL-U059 (*8, *9)	11KA/B (*10)	15KA/B (*10)	22KA/B (*10)	30KA/B (*10)	37KA/B-U042
	Converter Unit Model	—				MR-HP30KA	
Power Facility Capacity kVA (*2)		10	16	22	33	48	59
Continuous Running Duty	Rated Output kW	7.0	11	15	22	30	37 (75% ED)
	Rated Torque (N•m [oz•in])	44.6 (6315.4)	70.0 (9912)	95.5 (13522.8)	140 (19824)	191 (27045.6)	236 (33417.6)
Maximum Torque (N•m [oz•in])		134 (18974.4)	210 (29736)	286 (40497.6)	350 (49560)	477 (67543.2)	589 (83402.4)
Rated Speed r/min		1500					
Maximum Speed r/min		2000					
Permissible Instantaneous Speed r/min		2300					
Power Rate at Continuous Rated Torque kW/s		189	223	309	357	561	514
Rated Current (A)		37	65	87	126	174	202
Maximum Current (A)		111	195	261	315	435	505
Regeneration Braking Frequency (times/min) (*3)	With No Options	70	—	—	—	—	—
	MR-RB31 (300W)	124	—	—	—	—	—
	MR-RB51 (500W) (*4)	206	—	—	—	—	—
	GRZG400-2Ω (4) MR-RB65 (800W) (*5)	—	158	—	—	—	—
	GRZG400-1Ω (5) MR-RB66 (1300W) (*5)	—	—	191	—	—	—
	GRZG400-0.8Ω (5) MR-RB67 (1300W) (*5)	—	—	—	102	—	—
	MR-RB139 (1300W)	—	—	—	—	87	52
	MR-RB137 (3900W)	—	—	—	—	260	156
Moment of Inertia J (×10⁻⁴ kg.m²) [J (oz.in²)]	Standard	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)
	With Electromagnetic Brake	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—	—
Recommended Load/Motor Inertia Moment Ratio		10-times the servomotor's inertia moment max. (*6)					
Speed/Position Detector		17-bit encoder (Resolution per encoder/servomotor rotation: 131072 p/rev)					
Attachments		Oil seal					
Structure		Totally enclosed ventilated (protection degree: IP44)					
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)					
	Ambient Humidity	80% RH max. (non-condensing), storage 90% RH max. (non-condensing)					
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust					
	Elevation	1000 meters (3280 ft.) or less above sea level					
	Vibration (*7)	X: 11.7 m/s² • Y: 29.4 m/s²			X: 9.8 m/s² • Y: 9.8 m/s²		
Weight kg (lb)	Standard	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)
	With Electromagnetic Brake	70 (154.2)	126 (277.6)	146 (321.7)	—	—	—
Cooling Fan Power	Voltage, Frequency	1-ph 200 - 220 VAC 50/Hz 1-ph 200 - 230 VAC 60/Hz	3-phase 200 to 220VAC 50Hz • 3-phase 200 to 230VAC 60Hz				
	Input (W)	42 (50Hz) / 54 (60Hz)	32 (50Hz) / 40 (60Hz)		45 (50Hz) / 63 (60Hz)		120 (50Hz) / 175 (60Hz)
Cooling Fan Rated Current (A)		0.21 (50Hz) / 0.25 (60Hz)	0.30 (50Hz) / 0.25 (60Hz)		0.32 (50Hz) / 0.35 (60Hz)		0.65 (50Hz) / 0.80 (60Hz)

Notes:

1. Make sure that the effective torque is less than 75% of the 37kW capacity during the power factor improvement. Always use a DC reactor (MR-DCL37K).
2. The power facility capacity varies depending on the power supply's impedance.
3. The regenerative brake frequency shows the permissible frequency for decelerating the motor without a load from rated speed to a stop. When a load is connected, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated speed is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
4. Install a cooling fan (approx. 1.0m³/min, □92).
5. The values apply when the parameter No. 0 (for MR-J2S-A type) or No. 2 (for MR-J2S-B type) is changed, and cooling fans (approx. 1.0m³/min, □92 x 2 units) are installed. The GRZG400-□Ω is a standard accessory.
6. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
7. The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft.) Fretting of the bearing occurs easily when a motor stops, maintain vibration to approximately one-half of the allowable value).
8. MR-J2S-□CP (1)-S084 is also compatible. The compatible motor is the same as the MR-J2S-□CP(1).
9. The servo amplifier software version corresponding to each servo motor differs so contact your dealer for details on the servo amplifier type and the types of servo motor that are combined with the servo amplifier, and for information on the delivery schedule.
10. The amplifier version software compatible with HA-LFS 1500 r/min is as follows: For 11kW, 15kW, 22kW or 30kW (200V) A type: Version A0 or above; B type: Version A3 or above.

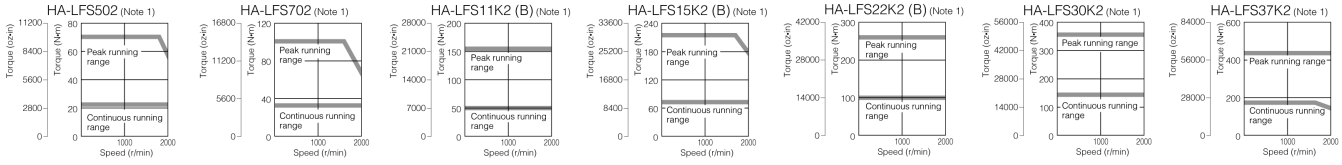


MR-J2S HA-LFS 2000 r/min Series Servomotor Specifications (200VAC Type)

Servomotor Series		HA-LFS 2000 r/min Series						
Models	Servomotor Model HA-LFS	502	702	11K2(B)	15K2(B)	22K2(B)	30K2	37K2 (*1)
	Servo-Amp Model MR-J2S	500A/B/CP/CL- (*8, *9)	700A/B/CP/CL (*8, *9)	11KA/B (*9)	15KA/B (*9)	22KA/B (*9)	30KA/B (*9)	30KA/B (*9)
	Converter Unit Model	—					MR-HP30KA	
Power Facility Capacity kVA (*2)		7.5	10.0	16	22	33	48	59
Continuous Running Duty	Rated Output kW	5.0	7.0	11	15	22	30	37 (75% ED)
	Rated Torque (N•m [oz•in])	23.9 (3384.2)	33.4 (4729.4)	52.5 (7434)	71.6 (10138.6)	105 (14868)	143 (20248.8)	177 (25063.2)
Maximum Torque (N•m [oz•in])		71.6 (10138.6)	100 (14160)	158 (22372.8)	215 (30444)	263 (37240.8)	358 (50692.8)	442 (62587.2)
Rated Speed r/min		2000						
Maximum Speed r/min		2000						
Permissible Instantaneous Speed r/min		2300						
Power Rate at Continuous Rated Torque kW/s		77.2	118	263	233	374	373	480
Rated Current (A)		25	34	63	77	112	166	204
Maximum Current (A)		75	102	189	231	280	415	510
Regeneration Braking Frequency (times/min) (*3)	With No Options	50	50	—	—	—	—	—
	MR-RB30 (300W)	120	—	—	—	—	—	—
	MR-RB31 (300W)	—	95	—	—	—	—	—
	MR-RB50 (500W) (*4)	200	—	—	—	—	—	—
	MR-RB51 (500W) (*4)	—	160	—	—	—	—	—
	GRZG400-2Ω (4) MR-RB65 (800W) (*5)	—	—	186	—	—	—	—
	GRZG400-1Ω (5) MR-RB66 (1300W) (*5)	—	—	—	144	—	—	—
	GRZG400-0.8Ω (5) MR-RB67 (1300W) (*5)	—	—	—	—	107	—	—
	MR-RB139 (1300W)	—	—	—		—	58	49
	MR-RB137 (3900W)	—	—	—	—		174	147
Moment of Inertia J (×10⁻⁴ kg·m²) [J (oz·in²)]	Standard	74.0 (404.5)	94.2 (515.0)	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)
	With Electromagnetic Brake	—	—	113 (617.7)	239 (1601.7)	369 (2017.2)	—	—
Recommended Load/Motor Inertia Moment Ratio		10-times the servomotor's inertia moment max. (*6)						
Speed/Position Detector		17-bit encoder (Resolution per encoder/servomotor rotation: 131072 p/rev)						
Attachments		Oil seal						
Structure		Totally enclosed non-ventilated (protection level: IP65)		Totally enclosed ventilated (protection level: IP44)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)						
	Ambient Humidity	80% RH max. (non-condensing), storage 90% RH max. (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation	1000 meters (3280 ft.) or less above sea level						
	Vibration (*7)	X: 11.7 m/s² • Y: 29.4 m/s²					X: 9.8 m/s² • Y: 9.8 m/s²	
Weight kg (lb)	Standard	28 (61.7)	35 (77.1)	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)
	With Electromagnetic Brake	—	—	70 (154.2)	126 (277.6)	146 (321.7)	—	—
Cooling Fan Power	Voltage, Frequency	—	—	1-ph 200-220 VAC 50/Hz 1-ph 200 - 230 VAC 60/Hz	3-phase 200 to 220VAC 50Hz • 3-phase 200 to 230VAC 60Hz			
	Input (W)	—	—	42 (50Hz) / 54 (60Hz)	32 (50Hz) / 40 (60Hz)		45 (50Hz) / 63 (60Hz)	
Cooling Fan Rated Current (A)		—	—	0.21 (50Hz) / 0.25 (60Hz)	0.30 (50Hz) / 0.25 (60Hz)		0.32 (50Hz) / 0.35 (60Hz)	

Notes:

1. Make sure that the effective torque is less than 75% of the 37kW capacity during the power factor improvement. Always use a DC reactor (MR-DCL37K).
2. The power facility capacity varies depending on the power supply's impedance.
3. The regenerative brake frequency shows the permissible frequency for decelerating the motor without a load from rated speed to a stop. When a load is connected, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated speed is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
4. Install a cooling fan (approx. 1.0m³/min, □ 92).
5. The value apply when the parameter No. D (for MR-J2S-A type) or No. 2 (for MR-J2S-B type) is changed, and cooling fans (approx. 1.0m³/min, □ 92 x 2 units) are installed. The GRZG400-□ Ω is a standard accessory.
6. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
7. The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft.) Fretting of the bearing occurs easily when a motor stops, maintain vibration to approximately one-half of the allowable value)
8. MR-J2S-□ CP(1)-S084 is also compatible. The compatible motor is the same as the MR-J2S-□ CP(1).
9. The amplifier version software compatible with HA-LFS 2000 r/min is as follows: For 5kW or 7kW (200V) A type: Version B0 or above; B type: Version B0 or above. Other than the motor described: A type; Version A0 or above; B type: A3 or above.

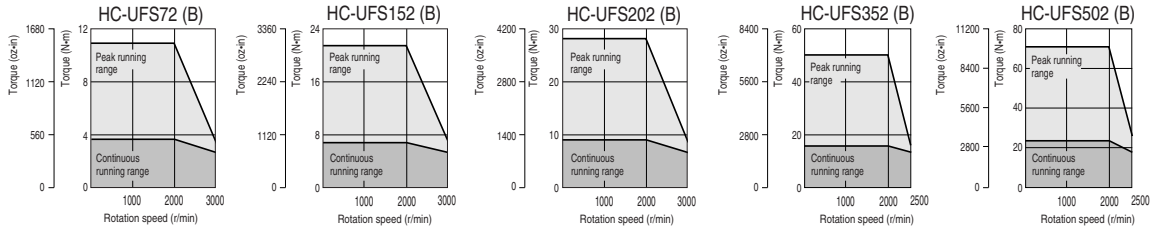


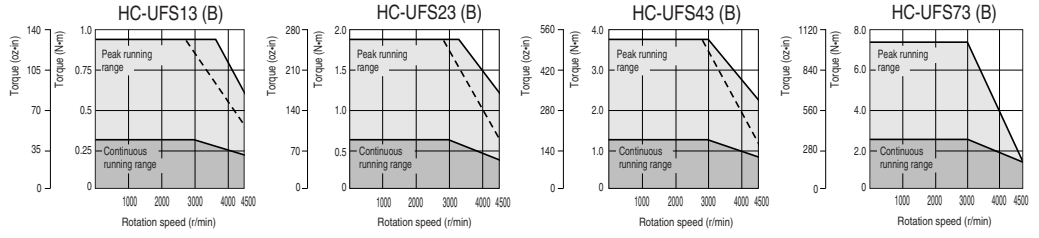
MR-J2S HC-UFS Series Servomotor Specifications

Servomotor Series		HC-UFS 2000 (Low Profile Type, Medium Capacity)					HC-UFS 3000 (Low Profile Type, Medium Capacity)			
Models / Specifications	Servomotor Model HC-UFS	72(B)	152(B)	202(B)	352(B)	502(B)	13(B)	23(B)	43(B)	73(B)
	Servo-Amp Model MR-	70A/B/CP/CL	200A/B/CP/CL	350A/B/CP/CL	500A/B/CP/CL	500A/B/CP/CL	10A/A1/B/B1 CP/CP1/CL/CL1	20A/A1/B/B1 CP/CP1/CL/CL1	40A/A1/B/B1 CP/CP1/CL/CL1	70A/B/CP/CL
Power Facility Capacity (kVA) (*1)		1.3	2.5	3.5	5.5	7.5	0.3	0.5	0.9	1.3
Continuous Running Duty	Rated Output (kW)	0.75	1.5	2.0	3.5	5.0	0.1	0.2	0.4	0.75
	Rated Torque (N·m [oz·in])	3.58 (506.9)	7.16 (1013.8)	9.55 (1352.3)	16.7 (2364.9)	23.9 (3384.5)	0.32 (45.3)	0.64 (90.6)	1.3 (184.1)	2.4 (339.8)
Maximum Torque (N·m [oz·in])		10.7 (1515.1)	21.6 (3058.5)	28.5 (4035.5)	50.1 (7094.8)	71.6 (10139.4)	0.95 (134.5)	1.9 (269.0)	3.8 (538.1)	7.2 (1019.5)
Rated Rotation Speed (r/min)		2000					3000			
Maximum Rotation Speed (r/min)		3000			2500		4500			
Permissible Instantaneous Rotation Speed (r/min)		3450			2875		5175			
Power Rate at Continuous Rated Torque (kW/s)		12.3	23.2	23.9	36.5	49.6	15.5	19.2	47.7	9.66
Rated Current (A)		5.4	9.7	14	23	28	0.76	1.5	2.8	4.3
Maximum Current (A)		16.2	29.1	42	68	84	2.5	4.95	9.24	12.9
Regeneration Braking Frequency (times/min) (*2)	With No Options	53	124	68	44	31	(*3)	(*3)	410	41
	MR-RB032 (30W)	79	—	—	—	—	—	—	1230	62
	MR-RB12 (100W)	264	—	—	—	—	—	—	4100	206
	MR-RB32 (300W)	791	—	—	—	—	—	—	—	—
	MR-RB30 (300W)	—	372	203	102	72	—	—	—	—
	MR-RB50 (500W)	—	620	338	169	119	—	—	—	—
Moment of Inertia J ($\times 10^{-4}$ kg·m^2) [WK^2 (oz·in^2)]	Standard	10.4 (56.9)	22.1 (120.8)	38.2 (208.9)	76.5 (418.3)	115 (628.8)	0.066 (0.361)	0.241 (1.315)	0.365 (1.994)	5.90 (32.2)
	With Electromagnetic Brake	12.4 (67.8)	24.1 (131.8)	46.8 (255.9)	85.1 (465.3)	123.6 (675.8)	0.074 (0.404)	0.323 (1.762)	0.447 (2.445)	6.10 (33.3)
Recommended Load/Motor Inertia Moment Ratio		Less than 15-times the servomotor's inertia moment (*4)								
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev								
Attachments		17 bit encoder, oil seal								
Structure		Totally enclosed non-ventilated (protection degree: IP65)					Totally enclosed non-ventilated (protection degree: IP65) (*5)			
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)								
	Ambient Humidity	80% RH max. (non-condensing), storage: 90% RH max. (non-condensing)								
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist, or dust								
	Elevation	1000 meters or less above sea level								
	Vibration (*6)	X, Y: 24.5m/s^2		X: 24.5m/s^2; Y: 49m/s^2			X, Y: 49m/s^2			
Weight kg (lb)	Standard	8 (17.6)	11 (24.3)	16 (35.3)	20 (44.1)	24 (52.9)	0.8 (1.76)	1.5 (3.31)	1.7 (3.75)	5.0 (11.02)
	With Electromagnetic Brake	10 (22.0)	13 (28.7)	22 (48.5)	26 (57.3)	30 (66.1)	1.2 (2.65)	2.2 (4.85)	2.4 (5.29)	6.2 (13.67)

Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
3. There are no limits on regeneration frequency as long as the effective torque is within the rated torque range.
4. Contact Mitsubishi if the load/ motor of inertia moment ratio exceeds the figure in the table.
5. Connector for cable terminal are excluded. However, IP65-compliant products (HC-UFS□-S1) including connector components have been prepared.
6. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.





∗Remarks:

1. Solid lines show torque characteristics for 3-phase 200-230V operation.
2. Torque characteristics are same for single-phase 230V operation.
3. For single-phase 100V operation, torque characteristics that are different from above-mentioned 1 and 2, are shown in broken lines.

Ⓒ MR-J2S Converter Unit (Required for the 30kW and 37kW Amplifiers)

Model Number		MR-HP30KA	
Amplifier Series		MR-J2S-30KA/B	MR-J2S-37KA/B
Stocked Item		S	
Main Circuit Power Supply	Voltage/Frequency	3-phase 200 to 230VAC 50/60Hz	
	Permissible Voltage Fluctuation	3-phase 170 to 253VAC 50/60Hz	
	Permissible Frequency Fluctuation	±5% max.	
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 to 230VAC 50/60Hz	
	Permissible Voltage Fluctuation	1-phase 170 to 235VAC 50/60Hz	
	Permissible Frequency Fluctuation	±5% max.	
	Power Consumption	50W	
Weight kg (lb)		22 (48.5)	

Ⓓ MR-J2S Cables

HC-KFS Motor Cables

Motor Type (IP55) (*2)	Standard Power Cable Model No.	Standard Encoder Cable Model No. (*1)
HC-KF(S)053	MR1-□M (Stocked Lengths: 2, 5, 10)	MR-JCCBL□M-L (Stocked Lengths: 2, 5, 10 & 20)
HC-KF(S)13		
HC-KF(S)23		
HC-KF(S)43		
HC-KF(S)73		
HC-KF(S)053B	MR1B-□M (Stocked Lengths: 2, 5, 10)	
HC-KF(S)13B		
HC-KF(S)23B		
HC-KF(S)43B		
HC-KF(S)73B		

□ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = 5 meter length, etc.)

HC-MFS Motor Cables

Motor Type (IP55) (*2)	Standard Power Cable Model No.	Standard Encoder Cable Model No. (*1)
HC-MF(S)053	MR1-□M (Stocked Lengths: 2, 5, 10)	MR-JCCBL□M-L (Stocked Lengths: 2, 5, 10 & 20)
HC-MF(S)13		
HC-MF(S)23		
HC-MF(S)43		
HC-MF(S)73		
HC-MF(S)053B	MR1B-□M (Stocked Lengths: 2, 5, 10)	
HC-MF(S)13B		
HC-MF(S)23B		
HC-MF(S)43B		
HC-MF(S)73B		

□ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = 5 meter length, etc.)

HC-RFS Motor Cables

Motor Type (IP65)	IP65 Power Cable (Unshielded) Model No. (*2)	IP65 Power Cable (Shielded) Model No.	IP65 Encoder Cable Model No. (*1)
HC-RF(S)103	MR3S-□M (Stocked Lengths: 2, 5, 10)	MR3SW-SH-□M	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20 & 30)
HC-RF(S)153			
HC-RF(S)203			
HC-RF(S)353	MR5S-□M (Stocked Lengths: 2, 5, 10)	MR5SW-SH-□M	
HC-RF(S)503			
HC-RF(S)103B	MR3SB-□M (Stocked Lengths: 2, 5, 10)	MR3SBW-SH-□M	
HC-RF(S)153B			
HC-RF(S)203B			
HC-RF(S)353B	MR5SB-□M (Stocked Lengths: 2, 5, 10)	MR5SBW-SH-□M	
HC-RF(S)503B			

□ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = 5 meter length, etc.)

Notes:
1. -L = Standard Flexibility; -H = Extended Flexibility The flex type shown is standard. Opposing flex cable (-L) or (-H) also available.
   HC-KFS and HC-MFS shaft through portion and connectors are NOT IP55.
   IP65 type motors are available, special order, consult Mitsubishi.
2. IP65 on Revision B cable and later only.

HC-SFS Motor Cables

Motor Type (IP65)	IP65 Power Cable (Unshielded) Model No. (*2)	IP65 Power Cable (Shielded) Model No.	IP65 Encoder Cable Model No. (*1)
HC-SF(S)52	MR2S-□M (Stocked Lengths: 2, 5, 10 & 20)	MR2SW-SH-□M	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20 & 30)
HC-SF(S)53			
HC-SF(S)81			
HC-SF(S)102			
HC-SF(S)103			
HC-SF(S)121	MR3S-□M (Stocked Lengths: 2, 5, 10)	MR3SW-SH-□M	
HC-SF(S)152			
HC-SF(S)153			
HC-SF(S)201	MR4S-□M (Stocked Lengths: 2, 5, 10)	MR4SW-SH-□M	
HC-SF(S)202			
HC-SF(S)203			
HC-SF(S)301	MR5S-□M (Stocked Lengths: 2, 5, 10)	MR5SW-SH-□M	
HC-SF(S)352			
HC-SF(S)353			
HC-SF(S)502			
HC-SF(S)702	MR6S-□M (Stocked Lengths: 2, 5, 10)	MR6SW-SH-□M	
HC-SF(S)52B	MR2SB-□M (Stocked Lengths: 2, 5, 10, & 20)	MR2SBW-SH-□M	
HC-SF(S)53B			
HC-SF(S)81B			
HC-SF(S)102B			
HC-SF(S)103B			
HC-SF(S)121B	MR3S-□M* (Stocked Lengths: 2, 5, 10)	MR3SW-SH-□M *	
HC-SF(S)152B	MR3SB-□M (Stocked Lengths: 2, 5, 10)	MR3SBW-SH-□M	
HC-SF(S)153B			
HC-SF(S)201B	MR4S-□M* (Stocked Lengths: 2, 5, 10)	MR4SW-SH-□M*	
HC-SF(S)202B			
HC-SF(S)203B			
HC-SF(S)301B	MR5S-□M* (Stocked Lengths: 2, 5, 10)	MR5SW-SH-□M*	
HC-SF(S)352B			
HC-SF(S)353B			
HC-SF(S)502B			
HC-SF(S)702B	MR6S-□M* (Stocked Lengths: 2, 5, 10)	MR6SW-SH-□M *	

* = Must order separate brake cable listed on page 91. □ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = 5 meter length, etc.)

HA-LFS Motor Cables

Motor Type (IP44)	IP65 Power Cable (Unshielded) Model No. (*2)	IP65 Power Cable (Shielded) Model No.	IP65 Encoder Cable Model No. (*1)
HA-LFS11K1MBK*	Hard-wired by user	Hard-wired by user	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20 & 30)
HA-LFS11K1MK			
HA-LFS11K2BK*			
HA-LFS11K2K			
HA-LFS12K1BK*			
HA-LFS12K1K			
HA-LFS15K1K			
HA-LFS15K1MBK*			
HA-LFS15K1MK			
HA-LFS15K2BK*			
HA-LFS15K2K			
HA-LFS20K1K			
HA-LFS22K1MK			
HA-LFS22K2BK*			
HA-LFS22K2K			
HA-LFS25K1K			
HA-LFS30K2K			
HA-LFS37K2K			
HA-LFS502K (IP65)	MR5S-□M (Stocked Lengths: 2, 5, 10)	MR5SW-SH-□M	
HA-LFS601BK*	Hard-wired by user	Hard-wired by user	
HA-LFS601K			
HA-LFS701MBK*			
HA-LFS701MK			
HA-LFS702K (IP65)	MR6S-□M (Stocked Lengths: 2, 5, 10)	MR6SW-SH-□M	
HA-LFS801BK*	Hard-wired by user	Hard-wired by user	
HA-LFS801K			

*= Must order separate brake cable listed on page 91. □ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = 5 meter length, etc.)

Note:

1. -L = Standard Flexibility; -H = Extended Flexibility. The flex type shown is standard. Opposing flex cable (-L) or (-H) also available. HC-KFS and HC-MFS shaft through portion and connectors are NOT IP55. IP65 type motors are available, special order, consult Mitsubishi.
2. IP65 on Revision B cable and later only.

HC-UFS Motor Cables

Motor Type (IP65) (*3)	IP65 Power Cable (Unshielded) Model No. (*4)	IP65 Power Cable (Shielded) Model No.	IP65 Encoder Cable Model No. (*1)
HC-UF(S)13	MR1-□M (Not IP65) (Stocked Lengths: 2, 5, 10)	N/A	MR-JCCBL□M-L (Stocked Lengths: 2, 5, 10 & 20)
HC-UF(S)23			
HC-UF(S)43			
HC-UF(S)72	MR2S-□M (Stocked Lengths: 2, 5, 10 & 20)	MR2SW-SH-□M	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20, 30)
HC-UF(S)73	MR1-□M (Stocked Lengths: 2, 5, 10)	N/A	MR-JCCBL□M-L (Stocked Lengths: 2, 5, 10, 20, 30)
HC-UF(S)152	MR3S-□M (Stocked Lengths: 2, 5, 10)	MR3SW-SH-□M	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20, 30)
HC-UF(S)202	MR5S-□M (Stocked Lengths: 2, 5, 10)	MR5SW-SH-□M	
HC-UF(S)352			
HC-UF(S)502			
HC-UF(S)13B	MR1B-□M (Not IP65) (Stocked Lengths: 2, 5, 10)	N/A	MR-JCCBL□M-L (Stocked Lengths: 2, 5, 10, 20)
HC-UF(S)23B			
HC-UF(S)43B			
HC-UF(S)72B	MR2SB-□M (Stocked Lengths: 2, 5, 10 & 20)	MR2SBW-SH-□M	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20, 30)
HC-UF(S)73B	MR1B-□M (Stocked Lengths: 2, 5, 10)	N/A	MR-JCCBL□M-L (Stocked Lengths: 2, 5, 10, 20)
HC-UF(S)152B	MR3SB-□M (Stocked Lengths: 2, 5, 10)	MR3SBW-SH-□M	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20)
HC-UF(S)202B	MR5S-□M* (Stocked Lengths: 2, 5, 10)	MR5SW-SH-□M*	
HC-UF(S)352B			
HC-UF(S)502B			

* = Must order separate brake cable listed below. □ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = 5 meter length, etc.)

Notes:
1. -L = Standard Flexibility; -H = Extended Flexibility. The flex type shown is standard. Opposing flex cable (-L) or (-H) also available.
2. HC-KFS and HC-MFS shaft through portion and connectors are NOT IP55. IP65 type motors are available, special order, consult Mitsubishi.
3. HC-UF(S)13(B), 23(B), 43(B) and 73(B) connectors are NOT IP65. IP65 type motors are available, special order, consult Mitsubishi.
4. IP65 on Revision B cable and later only.

Brake Cables

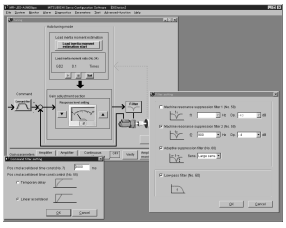
Description	IP65 Brake Cable (Unshielded) Model No. (*1)	IP65 Brake Cable (Shielded) Model No.
Brake Cable	MRBRKS-□M (Stocked Lengths: 2, 5, 10 & 20)	MRBRKSW-SH-□M

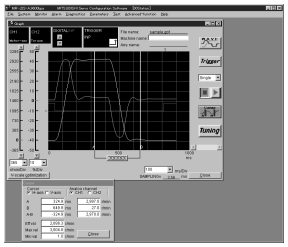
Notes: 1. IP65 on Revision B cable and later only.

E Software and Manuals

MR-Configurator Setup Software

This Windows®-based software package is used to setup, program and test the amplifier. Initial setup and programming is easy and quick with the user-friendly software, which has extensive help functions and drop-downs. MR-Configurator also has many diagnostic functions such as a machine simulator to aid in mechanical design, a machine analyzer to find resonant frequencies of the load and set notch filters, an alarm monitor with history data, and the ability to assign and monitor I/O.





Features:

- Can be set up using a personal computer.
  Works on Windows 95/98/NT/ME/2000 Professional, XP Professional*.
- Provides numerous monitor functions. Provides graph display function that enables display of servomotor status upon input signal triggers such as command pulses, droop pulses, and r/min.
- Allows servomotors to be tested easily from a personal computer.

* Windows is a registered trademark of the Microsoft Corporation.

Description	Model Number	Stocked Item
Windows Communication Software	MR-CONFIGURATOR	S
Communications Cable	MR-CPCATCBL3M	S
Communications Cable (MR-J2S-CP-S084 only, connected via MR-J2S-T01)	MR-JRPCATCBL3M	S

Manuals

Hardware Description	Model Number	Stocked Item
MR-J2S-A Servo Amp Instruction Manual	SH(NA)030006	S
MR-J2S-B Servo Amp Instruction Manual	SH(NA)030007	–
MR-J2S-CP Servo Amp Instruction Manual	SH(NA)030017	S
MR-J2S-CL Servo Amp Instruction Manual	SH(NA)030034	S
Servomotor Instruction Manual	SH(NA)3181	–
MR-HP30KA/55KA4 Converter Manual	SH(NA)030024	–
EMC Guidelines (Servo) Manual	IB(NA)67310	–

Note: Many of these manuals are available for free download from our website, www.meau.com

F MR-J2S System Options

Description	Model Type	Model Number	Stocked Item / Lengths
Battery (Required for Absolute Positioning)	All MR-J2S Amplifier Models	MR-BAT	S
Terminal Block	All MR-J2S Amplifier Models	MR-TB20	S
Terminal Block Cable	All MR-J2S Amplifier Models	MR-J2TBL☐M	0.5, 1
SSCNET Cable	MRJ2S☐B to MR-J2S☐B	MR-J2HBUS☐M	0.5, 1, 3, 5
Converter Bus Cable (use 1m or less)	MRJ2S to Converter	MR-J2HBUS☐M	0.5, 1
Terminator	MRJ2S☐B and Converter	MR-A-TM	S
TE2 Power Connector	MR-J2S-10 to 60 only	K05A01460200	S
TE2 Power Connector	MR-J2S-70 to 100 only	K05A01460201	S
CC-Link Interface Module	MR-J2S-CP-S084 only	MR-J2S-T01	S
Cable to Connect Amplifier to MR-J2S-T01 (CC-Link)	MR-J2S-CP-S084 only	MR-J2HBUS05M	S
CN1A/B I/O Connector Kit (Kit Contains One Each CN1A & CN1B)	All MR-J2S Amplifier Models	MR-J2CN1	S
CN4 Connector Kit	MR-J2S, 11kW or larger	MR-J2CMP2	S
Converter D-I/O Connector CN1	MR-HP30KA/55KA4 Converter	MR-HP4CN1	S
CN1A/B I/O Pigtail Cables (One Each Optional for CN1A & CN1B)	All MR-J2S Amplifier Models	MR-CCN1CBL-3M (3m length) MR-CCN1CBL-5M (5m length)	S

Note: Terminal Block Cable can be ordered in 0.5 and 1 meter lengths.

Servo-Amp Model (MR-J2S-)	Model Number — Regenerative Power [W] (Note)											
	MR-RB032	MR-RB12	MR-RB30	MR-RB31	MR-RB32	MR-RB50	MR-RB51	MR-RB65	MR-RB66	MR-RB67	MR-RB139	MR-RB137 (x3)
Stocked Item	S	S	S	–	S	S	S	–	–	–	–	–
10A(1)/B(1)/CP(1)/CL(1)	30	X	X	X	X	X	X	X	X	X	X	X
20A(1)/B(1)/CP(1)/CL(1)	30	100	X	X	X	X	X	X	X	X	X	X
40A(1)/B(1)/CP(1)/CL(1)	30	100	X	X	X	X	X	X	X	X	X	X
60A/B/CP/CL	30	100	X	X	X	X	X	X	X	X	X	X
70A/B/CP/CL (-U☐)	30	100	X	X	300	X	X	X	X	X	X	X
100A/B/CP/CL	30	100	X	X	300	X	X	X	X	X	X	X
200A/B/CP/CL	X	X	300	X	X	500	X	X	X	X	X	X
350A/B/CP/CL	X	X	300	X	X	500	X	X	X	X	X	X
500A/B/CP/CL	X	X	300	X	X	500	X	X	X	X	X	X
700A/B/CP/CL	X	X	X	300	X	X	500	X	X	X	X	X
11KA/B	X	X	X	X	X	X	X	500 (800)	X	X	X	X
15KA/B	X	X	X	X	X	X	X	X	850 (1300)	X	X	X
22KA/B	X	X	X	X	X	X	X	X	X	850 (1300)	X	X
30KA/B	X	X	X	X	X	X	X	X	X	X	1300	3900
37KA/B	X	X	X	X	X	X	X	X	X	X	1300	3900

Note: This value is the regenerative power of the resistor and is not the rated power.

Description	Model Type	Model Number	Stocked Item
Regeneration Brake Unit (Must Be Combined With Resistor Unit)	MR-J2S-500☐ – 700☐	FR-BU-15K-UL	–
	MR-J2S-11K☐ – 15K☐	FR-BU-30K-UL	–
	MR-J2S-22K☐	FR-BR-55K-UL	–
Regeneration Resistor Unit (Must Be Combined With Brake Unit)	MR-J2S-500☐ – 700☐	FR-BR-15K-UL	–
	MR-J2S-11K☐ – 15K☐	FR-BR-30K-UL	–
	MR-J2S-22K☐	FR-BR-55K-UL	–
Power Return Converter	MR-J2S-500☐	FR-RC-15K	–
	MR-J2S-700☐/11K☐/15K☐	FR-RC-30K	–
	MR-J2S-22K☐	FR-RC-55K	–
External Dynamic Brake Unit	MR-J2S-11K☐	DBU-11K	–
	MR-J2S-15K☐	DBU-15K	–
	MR-J2S-22K☐	DBU-22K	–
	MR-J2S-30K☐ / 37K☐	DBU-37K	–
Maintenance Junction Card	All models	MR-J2CN3TM	–
AC Power Factor Improving Reactor	MR-J2S-10☐(1) / 20☐	MRL-00402	S
	MR-J2S-40☐(1) / 20☐(1)	MRL-00402	S
	MR-J2S-60☐ / 70☐ / 40☐(1)	MRL-00802	S
	MR-J2S-100☐	MRL-01202	S
	MR-J2S-200☐	MRL-01802	S
	MR-J2S-350☐	MRL-03502	S
	MR-J2S-500☐	MRL-04502	S
	MR-J2S-700☐/11K☐	MRL-05502	–
	MR-J2S-15K☐	MRL-10002	S
	MR-J2S-22K☐	MRL-13002	–
DC Power Factor Improving Reactor	MR-J2S-11K☐	DCA004003	–
	MR-J2S-15K☐	DCA005001	–
	MR-J2S-22K☐	DCA008002	–
	MR-J2S-30K☐	MR-DCL30K	–
	MR-J2S-37K☐	MR-DCL37K	–
Line Noise Filter	MR-J2S-200☐ or less	FR-BSF01	S
	MR-J2S-350☐ or more	FR-BLF	S
Radio Noise Filter	All models	FR-BIF	S
EMC Filter	MR-J2S-10☐ – 70☐	SF1252	S
	MR-J2S-10☐1 – 40☐1		
	MR-J2S-100☐	MF-3F480-010.230	–
	MR-J2S-200☐ – 350☐	MF-3F480-025.230	–
	MR-J2S-500☐– 750☐	MF-3F230-050.230	–
	MR-J2S-11K☐	HF3060A-TMA	–
	MR-J2S-15K☐	HF3080A-TMA	–
	MR-J2S-22K☐	HF3100A-TMA	–
	MR-J2S-30K☐ – 37K☐	HF3200A-TMA	–
Outer-Mount Heat Sink Attachment	For MR-J2S-30K☐/37K☐	MR-ACN55K	–
	For Converter MR-HP30KA	MR-ACNP55K	–

Note: ☐= A, B, CP or CL.

MR-J2S Motor Power Connector Kits

Description	Model Type	Model Number	Stocked Item
Power Connector Kit (Straight Plug)	HC-SFS 52, 53, 81, 102, 103, 152, 153	MR-MTR-CON-KIT-AS	S
	HC-RFS 103, 153 203; HC-UFS 72, 152		
	HC-SFS 121, 201, 202, 203, 301, 352, 353, 502; HC-RFS 353, 503; HC-UFS 202, 352, 502; HA-LFS 502	MR-MTR-CON-KIT-BS	S
	HC-SFS 702; HA-LFS 702	MR-MTR-CON-KIT-DS	S
Power Connector Kit (90° Angle Plug)	HC-SFS 52, 53, 81, 102, 103, 152, 153	MR-MTR-CON-KIT-A	S
	HC-RFS 103, 153 203; HC-UFS 72, 152		
	HC-SFS 121, 201, 202, 203, 301, 352, 353, 502; HC-RFS 353, 503; HC-UFS 202, 352, 502; HA-LFS 502	MR-MTR-CON-KIT-B	S
	HC-SFS 702; HA-LFS 702	MR-MTR-CON-KIT-D	S
Power Connector Kit (IP65 & "CE") (Straight Plug)	HC-SFS 52, 53, 81, 102, 103, 152, 153; HC-RFS 103, 153, 203, HC-UFS 72, 152	MR-PWCNS1	S
	HC-SFS 121, 201, 202, 203, 301, 352, 353, 502; HC-RFS 353, 503; HC-UFS 202, 352, 502; HA-LFS 502	MR-PWCNS2	S
	HC-SFS 702; HA-LFS 702	MR-PWCNS3	S

Motor Power/Brake Connector Kits

Description	Model Type	Model Number	Stocked Item
Power Connector Kit (IP20) (Instead of MR1-☐M) (No Brake)	HC-UFS 13, 23, 43, 73, HC-MFS 053, 13, 23, 43, 73	MR-PWCNK1	S
	HC-KFS 053, 13, 23, 43, 73		
Power Connector Kit (IP20) (Instead of MR1B-☐M) (With Brake)	HC-UFS 13, 23, 43, 73, HC-MFS 053, 13, 23, 43, 73, HC-KFS 053, 13, 23, 43, 73	MR-PWCNK2	S

Motor Brake Connector Kits

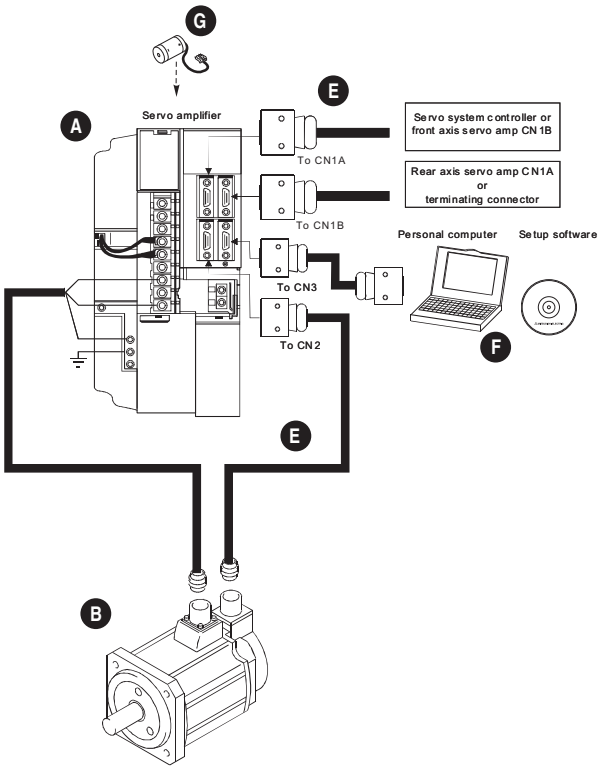
Description	Model Type	Model Number	Stocked Item
Brake Connector Kit (IP65 & "CE") (Instead of MRBRKS-☐M)	Connectors only (instead of MRBRKS-☐M cable)	MR-BKCN	S

Motor Encoder Connector Kits

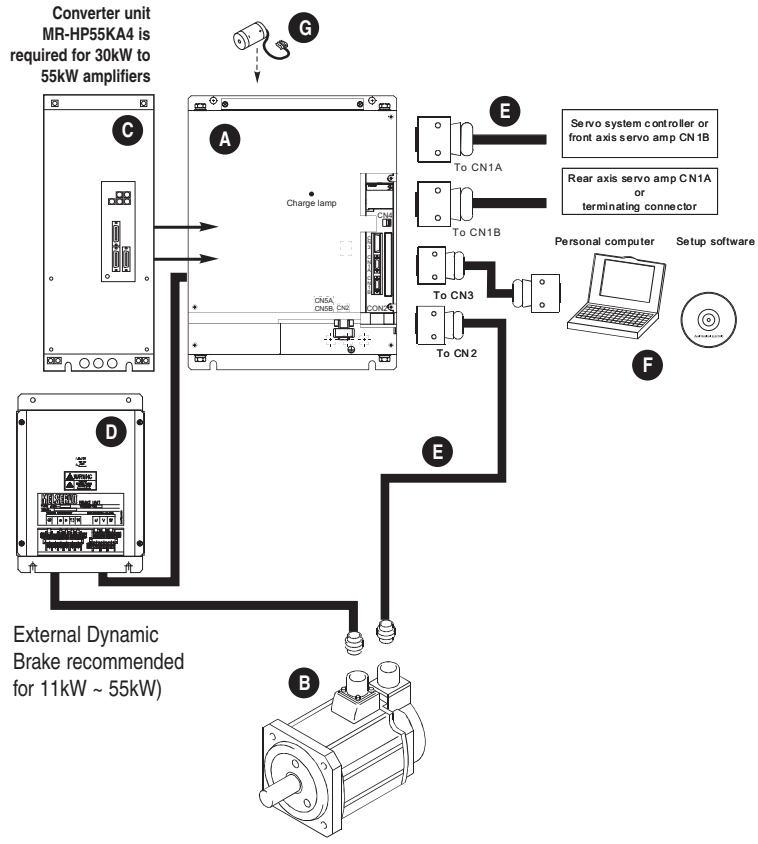
Description	Model Type	Model Number	Stocked Item
Encoder Connector Kit (IP20) (Instead of MR-JCCBL☐M)	HC-UFS 13-42, 73-502 HC-MFS 053-73 HC-KFS 053-73	MR-J2CNM	S
Encoder Connector Kit	All HC-SFS; All HA-LFS HC-RFS 103-503 HC-UFS 72, 152-502	MR-J2CNS	S
Encoder Connector Kit (IP65 & "CE") (instead of MR-ENCBL☐M-H)	All HC-SFS All HA-LFS HC-RFS 103-503 HC-UFS 72, 152-502	MR-ENCNS	S

MR-J2S Servomotors and Amplifiers 380~480VAC

500W to 7kW



11kW to 55kW



A. Amplifier 95
B. Motor 96
C. Converter (Required for 30kW ~55kW) 101
D. External Dynamic Brake Unit (Recommended for 11kW ~ 55kW) 101
E. Cables 101
F. Software and Manuals 102
G. Optional Accessories 102

Ⓐ MR-J2S Amplifiers

Amplifier Selection

MR-J2S □ □ **4 -** □

Special Specification

Mitsubishi J2 Super Series general-purpose AC Servo Amplifier

Symbol	Description
A	General purpose interface
B	SSCNET

Symbol	Power Supply
4	3-phase 380-480V AC

Conforms to following standard$: EN, UL, cUL

Compatible Motors		
Symbol	HC-SFS	HA-LFS
60	524	—
100	1024	—
200	1524, 2024	—
350	3524	—
500	5024	—
700	7024	—
11K	—	8014, 12K14, 11K1M4, 11K24
15K	—	15K14, 15K1M4, 15K24
22K	—	20K14, 22K1M4, 22K24
30K*	—	25K14, 30K14, 30K1M4, 30K24
37K*	—	37K14, 37K1M4, 37K24
45K*	—	45K1M4, 45K24
55K*	—	50K1M4, 55K24

* Converter unit MR-HP55KA4 is required for 30kW ~55kW amplifiers

Stocked Amplifiers

Model Number
MR-J2S-60A4
MR-J2S-60B4
MR-J2S-100A4
MR-J2S-100B4
MR-J2S-200A4
MR-J2S-200B4
MR-J2S-350A4
MR-J2S-350B4
MR-J2S-500A4
MR-J2S-500B4
MR-J2S-700A4
MR-J2S-700B4
MR-J2S-11KA4
MR-J2S-11KB4
MR-J2S-15KA4
MR-J2S-15KB4
MR-J2S-22KA4
MR-J2S-22KB4
MR-J2S-55KA4
MR-J2S-110KA4

Servo Amp Model MR-J2S-		60A4/B4	100A4/B4	200A4/B4	350A4/B4	500A4/B4	700A4/B4	11KA4/B4	15KA4/B4	22KA4/B4	30KA4/B4	37KA4/B4	45KA4/B4	55KA4/B4
Converter Unit Model		—									MR-HP55KA4			
Control Circuit Power Supply	Voltage/Frequency	24VDC						1-phase 380 to 480VAC 50/60Hz						
	Permissible Voltage Fluctuation	20.4 to 27.6VDC						1-phase 323 to 528VAC 50/60Hz						
	Permissible Frequency Fluctuation	—						±5% max.						
	Power Consumption	25W						50W						
Main Circuit Power Supply	Voltage /Frequency	3-phase 380 to 480VAC 50/60Hz									The servo amplifier's main circuit power is supplied from the converter unit.			
	Permissible Volt. Fluctuation	3-phase 323 to 528VAC 50/60Hz												
	Permissible Frequency Fluctuation	±5% max.												
Control System		Sine-wave PWM control/current control system												
Dynamic Brake		Built-in (700B4 externally attached)						External option						
Safety Features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servomotor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection												
Position Control Mode	Maximum Input Pulse Frequency	500kpps (when using differential receiver), 200kpps (when using open collector)												
	Positioning Feedback Pulse	Resolution per encoder/servomotor rotation: 131072 p/rev												
	Command Pulse Multiple	Electronic gear A/B multiple, A: 1 to 65535 or 131072, B: 1 to 65535 1/50 < A/B < 500												
	Positioning Complete Width Setting	0 to ±10000 pulses (command pulse unit)												
	Excess Error	±10 rotations												
	Torque Limit	Set by parameters or external analog input (0 to +10VDC, max. torque)												
Speed Control Mode	Speed Control Range	Analog speed command 1:2000, internal speed command 1:5000												
	Analog Speed Com. Input	0 to ±10VDC / rated speed												
	Speed Fluctuation Rate	±0.01% max. (load fluctuation 0 to 100%) 0% (power fluctuation ±10%) ±0.2% max. ambient temperature 25°C ±10°C (77°F ±50°F) when using analog speed command												
	Torque Limit	Set by parameters or external analog input (0 to +10VDC, max. torque)												
Torque Control Mode	Analog Torque Com. Input	0 to ±8VDC max. torque (input impedance 10 to 12kΩ)												
	Speed Limit	Set by parameters or external analog input (0 to ±10VDC, rated speed)												
Structure		Fan cooling open (IP00)												
Environment	Ambient Temperature	0 to +55°C (32 to +131°F) (non-freezing), storage: -20 to +65°C (-4 to 149°F) (non-freezing)												
	Ambient Humidity	90% RH max. (non-condensing). storage: 90% RH max. (non-condensing)												
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust												
	Elevation	1000 meters or less above sea level												
	Oscillation	5.9 m/s^2 max												
Weight kg (lb)		2.0 (4.4)	2.0 (4.4)	2.0 (4.4)	5 (11)	5 (11)	7.2 (15.9)	15 (33)	16 (35.3)	20 (44.1)	36 (79.3)	47 (103.5)	47 (103.5)	47 (103.5)

B MR-J2S 380–480VAC Servomotors

	Motor Series	Rated Speed (Max. r/min)	Rated Output Capacity (kW)	Servomotor Type / Brake (B)	Protective Degree Rating	Features	Application Examples
Medium Capacity	**HC-SFS Series**	2000	7 types 0.5, 1.0, 1.5, 2.0, 3.5, 5.0, 7.0	Available	IP65	**Medium inertia** Suitable for variable applications.	• Conveyor machines • Robots • X-Y tables
Large Capacity Series	**HA-LFS Series**	1000	7 types 8.0, 12.0, 15.0, 20.0, 25.0, 30.0, 37.0 (*1)	Available	IP44	**Low inertia** Suitable for variable applications. Three models from low to medium-speed are available. As a standard, 30kW and larger capabilities are compatible with flange mounting or foot mounting.	• Injection molding machines • Semiconductor manufacturing devices • Large conveyor machines
		1500	7 types 11.0, 15.0, 22.0, 30.0, 37.0, 45.0, 50.0	Available	IP44		
		2000	7 types 11.0, 15.0, 22.0, 30.0, 37.0, 45.0, 55.0	Available	IP44		

Note:
1. The HA-LFS 1000 r/min 400V 8.0 to 25 kW capacities are special order products. Contact Mitsubishi for details on the delivery schedule.

Servomotor Selection

HC-SFS □ 4 □ □

131072 pulse p/rev encoder for use in absolute and incremental systems (serial encoder)

• Conforms to following standards: EN, UL, cUL

Symbol	Rated Output Capacity kW
52	0.5
102	1.0
152	1.5
202	2.0
352	3.5
502	5.0
702	7.0

Symbol	Shaft
None	Straight Shaft
K	Keyway (Standard)

Symbol	Electromagnetic Brake
None	None
B	Installed

Symbol	Description
4	400V Class

Stocked Motors

Model Number
HC-SFS524K
HC-SFS524BK
HC-SFS1024K
HC-SFS1524K
HC-SFS1524BK
HC-SFS2024K
HC-SFS2024BK
HC-SFS3524K
HC-SFS3524BK
HC-SFS5024K
HC-SFS7024K
HC-SFS7024BK

HA-LFS □ □ 4 □ □

131072 pulse p/rev encoder for use in absolute and incremental systems (serial encoder)

• Conforms to following standards: EN, UL, cUL

Symbol	Rated Output Capacity kW
801	8
11K	11
12K	12
15K	15
20K	20
22K	22
25K	25
30K*	30
37K*	37
45K*	45
50K*	50
55K*	55

* No brake available

Symbol	Rated Speed r/min
1	1000
1M	1500
2	2000

Symbol	Description
4	400V Class

Symbol	Shaft
None	Straight Shaft
K	Keyway (Standard)

Symbol	Electromagnetic Brake
None	None
B	Installed

Stocked Motors

Model Number
HA-LFS11K24K
HA-LFS11K24BK
HA-LFS15K24K
HA-LFS15K24BK
HA-LFS22K24K
HA-LFS22K24BK
HA-LFS55K24K

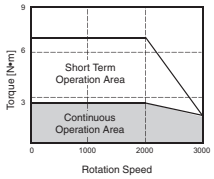
MR-J2S 380–480VAC HC-SFS 2000 r/min Series Servomotor Specifications

Models	Servomotor Model HC-SFS	524(B)	1024(B)	1524(B)	2024(B)	3524(B)	5024(B)	7024(B)
	Servo-Amp Model MR-J2S-	60A4/B4	100A4/B4	200A4/B4	200A4/B4	350A4/B4	500A4/B4	700A4/B4
Power Facility Capacity kVA (*1)		1.0	1.7	2.5	3.5	5.5	7.5	10.0
Continuous Running Duty	Rated Output kW	0.5	1.0	1.5	2.0	3.5	5.0	7.0
	Rated Torque (N•m [oz•in])	2.39 (338.4)	4.78 (676.8)	7.16 (1013.9)	9.55 (1352.3)	16.7 (2364.7)	23.9 (3384.2)	33.4 (4729.4)
Maximum Torque (N•m [oz•in])		7.16 (1013.9)	14.4 (2039.0)	21.6 (3058.6)	28.5 (4035.6)	50.1 (7094.2)	71.6 (10138.6)	100 (14160)
Rated Speed r/min		2000						
Maximum Speed r/min		3000			2500		2000	
Permissible Instantaneous Speed r/min		3450			2850		2300	
Power Rate at Continuous Rated Torque kW/s		8.7	16.7	25.6	21.5	34.1	56.5	69.7
Rated Current (A)		1.5	2.8	4.4	5.4	8.6	14	17
Maximum Current (A)		4.5	8.4	13.2	16.2	25.8	42	51
Regeneration Braking Frequency (times/min) (*2, *3)	With No Options	125	200	136	64	43	39	32
	MR-RB1L-4 (100W)	415	—	—	—	—	—	—
	MR-RB3M-4 (300W)	—	600	—	—	—	—	—
	MR-RB3H-4 (300W)	—	—	408	192	—	—	—
	MR-RB5H-4 (500W) (*6)	—	—	680	320	—	—	—
	MR-RB3G-4 (300W)	—	—	—	—	100	90	—
	MR-RB5G-4 (500W) (*6)	—	—	—	—	167	150	—
	MR-RB34-4 (600W)	—	—	—	—	—	—	57
	MR-RB54-4 (500W) (*6)	—	—	—	—	—	—	95
Moment of Inertia J (×10^{-4} kg·m^2) [WK^2 (oz·in^2)]	Standard	6.6 (36.1)	13.7 (74.9)	20.0 (109)	42.5 (232)	82.0 (448)	101 (552)	160 (875)
	With Electromagnetic Brake	8.6 (47.0)	15.7 (85.8)	22.0 (120)	52.5 (287)	92.0 (503)	111 (607)	170 (929)
Recommended Load/Motor Inertia Moment Ratio		Less than 15-times the servomotor's inertia moment (*4)						
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev						
Attachments		17 bit encoder, oil seal						
Structure		Totally enclosed non-ventilated (protection degree: IP65)						
Environment	Ambient Temperature	0 to +40°C (32 to 104°F) (non-freezing), storage: -15 to +70°C (5 to +158°F) (non-freezing)						
	Ambient Humidity	80% RH max. (non-condensing), storage: 90% RH max. (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation	1000 meters or less above sea level						
	Vibration (*5)	X, Y: 24.5 m/s^2			X: 24.5 m/s^2 • Y: 49 m/s^2		X: 24.5 m/s^2 • Y: 29.4 m/s^2	
Weight kg (lb)	Standard	5 (11.0)	7 (15.4)	9 (19.8)	12 (26.4)	19 (41.9)	23 (50.7)	32 (70.5)
	With Electromagnetic Brake	7 (15.4)	9 (19.8)	11 (24.2)	18 (39.7)	25 (55.1)	29 (63.9)	38 (83.7)

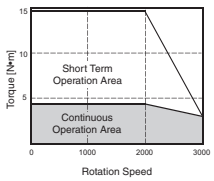
Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
3. The regenerative braking frequency of the 600W and smaller servo amplifier may fluctuate due to the affect of the power voltage since the energy charged by the electrolytic capacitor in the servo amplifier is large.
4. Contact Mitsubishi Electric if the load/motor of inertia moment ratio exceeds the figure in the table.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
6. Install a cooling fan (approx. 1.0m^3/min, ☐92).

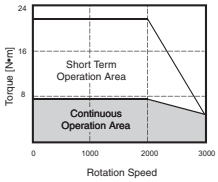
HC-SFS524 (B)



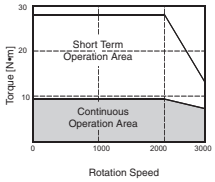
HC-SFS1024 (B)



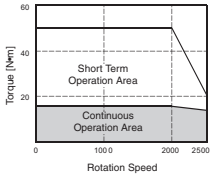
HC-SFS1524 (B)



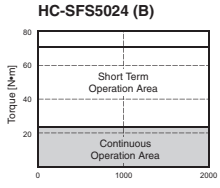
HC-SFS2024 (B)



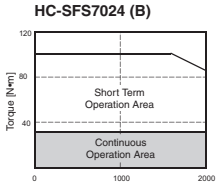
HC-SFS3524 (B)



HC-SFS5024 (B)



HC-SFS7024 (B)

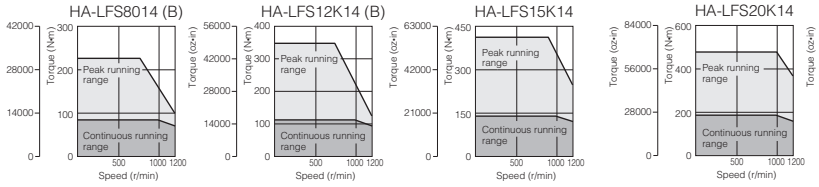


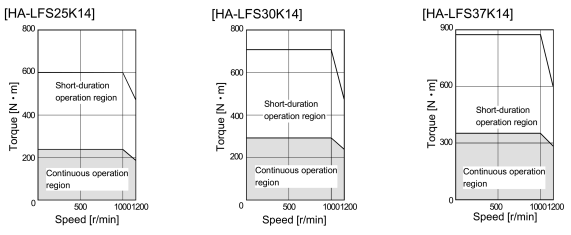
MR-J2S 380–480VAC HA-LFS 1000 r/min Series Servomotor Specifications

Models	Servomotor Model HA-LFS	8014(B)	12K14(B)	15K14(B)	20K14(B)	25K14(B)	30K14	37K14
	Servo-Amp Model MR-J2S	11KA4/B4-U061 (*6)	11KA4/B4-U062 (*6)	15KA4/B4-U063 (*6)	22KA4/B4-U064 (*6)	30KA4/B4-U065 (*6)	30KA4/B4	37A4/B4-U040
	Converter Unit Model	—					MR-HP55KA4	
Power Facility Capacity kVA (*1)		12	18	22	30	38	48	59
Continuous Running Duty	Rated Output kW	8	12	15	20	25	30	37
	Rated Torque (N•m [oz•in])	76.4 (10818.2)	115 (16284)	143 (20248.8)	191 (27045.6)	239 (33842.4)	286 (40497.6)	353 (49984.8)
Maximum Torque (N•m [oz•in])		229 (32426.4)	344 (48710.4)	415 (58764)	477 (67543.2)	597 (84535.2)	716 (101385.6)	883 (125032.8)
Rated Speed r/min		1000						
Maximum Speed r/min		1200						
Permissible Instantaneous Speed r/min		1380						
Power Rate at Continuous Rated Torque kW/s		265	445	373	561	528	626	668
Rated Current (A)		21	31	42	59	70	77	94
Maximum Current (A)		63	93	126	148	175	193	235
Regeneration Braking Frequency (times/min) (*2)	GRZG400-5Ω (4) MR-RB6B-4 (800W) (*3)	354	264	—	—	—	—	—
	GRZG400-2.5Ω (5) MR-RB60-4 (1300W) (*3)	—	—	230	—	—	—	—
	GRZG400-2Ω (5) MR-RB6K-4 (1300W) (*3)	—	—	—	195	117	—	—
	MR-RB136-4 (1300W)	—	—	—	—	—	97	68
	MR-RB138-4 (3900W)	—	—	—	—	—	290	203
Moment of Inertia J (×10^{-4} kg·m^2) [WK^2 (oz·in^2)]	Standard	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)	1310 (7161.2)	1870 (10222.5)
	With Electromagnetic Brake	293 (1601.7)	369 (2017.2)	—	—	—	—	—
Recommended Load/Motor Inertia Moment Ratio		Less than 10-times the servomotor's inertia moment (*4)						
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev						
Attachments		17 bit encoder, oil seal						
Structure		Totally enclosed ventilated (protection degree: IP44)						
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)						
	Ambient Humidity	80% RH max. (non-condensing), storage 90% RH max. (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation	1000 meters or less above sea level						
	Vibration (*5)	X: 11.7 m/s^2 • Y: 29.4 m/s^2	X: 11.7 m/s^2 • Y: 29.4 m/s^2	X: 9.8 m/s^2 • Y: 9.8 m/s^2				
Weight kg (lb)	Standard	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)	250 (550.8)	335 (738)
	With Electromagnetic Brake	126 (277.6)	146 (321.7)	—	—	—	—	—
Cooling Fan Power	Voltage, Frequency	3-phase 380 to 420 VAC 50/60Hz	3-phase 380 to 420 VAC 50/60Hz	3-phase 380 to 460VAC 50/60Hz				
	Input (W)	55 (50Hz) / 75 (60Hz)	55 (50Hz) / 75 (60Hz)	65 (50Hz) / 85 (60Hz)		110 (50Hz) / 150 (60Hz)		
Cooling Fan Rated Current (A)		0.12 (50Hz) / 0.11 (60Hz)	0.12 (50Hz) / 0.11 (60Hz)	0.12 (50Hz) / 0.14 (60Hz)		0.20 (50Hz) / 0.22 (60Hz)		

Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
3. The values apply when the parameter No. 0 (for MR-J2S-A type) or No. 2 (for MR-J2S-B type) is changed, and the cooling fan (approx. 10m^3/min, □92 x2x units) are installed.
4. Contact Mitsubishi Electric if the load/motor of inertia moment ratio exceeds the figure in the table.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
6. The servomotor amplifier software version corresponding to each servomotor differs, so contact your dealer for details on the servo amplifier type and the types of servomotor that are combined with servo amplifiers, and for information on delivery schedule.





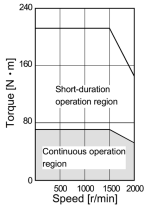
MR-J2S 380–480VAC HA-LFS 1500 r/min Series Servomotor Specifications

Servomotor Series		HA-LFS 1500						
Models	Servomotor Model HA-LFS	11K1M4(B)	15K1M4(B)	22K1M4	30K1M4	37K1M4	45K1M4	50K1M4
	Servo-Amp Model MR-J2S	11KA4/B4	15KA4/B4	22KA4/B4	30KA4/B4	37KA4/B4	45KA4/B4	55KA4/B4
	Converter Unit Model	—			MR-HP55KA4			
Power Facility Capacity kVA (*1)		16	22	33	48	59	71	80
Continuous Running Duty	Rated Output kW	11	15	22	30	37	45	50
	Rated Torque (N•m [oz•in])	70.0 (9912)	95.5 (13522.8)	140 (19824)	191 (27045.6)	236 (33417.6)	286 (40497.6)	318 (45028.8)
Maximum Torque (N•m [oz•in])		210 (29736)	286 (4097.6)	350 (49560)	477 (67543.2)	589 (83402.4)	716 (101385.6)	796 (112713.6)
Rated Speed r/min		1500						
Maximum Speed r/min		2000						
Permissible Instantaneous Speed r/min		2300						
Power Rate at Continuous Rated Torque kW/s		223	309	357	561	514	626	542
Rated Current (A)		33	44	63	87	101	128	143
Maximum Current (A)		99	132	158	218	253	320	358
Regeneration Braking Frequency (times/min) (*2)	GRZG400-5Ω (4) MR-RB6B-4 (800W) (*3)	158	—	—	—	—	—	—
	GRZG400-2.5Ω (5) MR-RB60-4 (1300W) (*3)	—	191	—	—	—	—	—
	GRZG400-2Ω (5) MR-RB6K-4 (1300W) (*3)	—	—	102	—	—	—	—
	MR-RB136-4 (1300W)	—	—	—	87	52	43	30
	MR-RB138-4 (3900W)	—	—	—	260	156	129	90
Moment of Inertia J (×10^{-4} kg·m^2) [WK^2 (oz·in^2)]	Standard	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)	1310 (7161.2)	1870 (10222.5)
	With Electromagnetic Brake	293 (1601.7)	369 (2017.2)	—	—	—	—	—
Recommended Load/Motor Inertia Moment Ratio		Less than 10-times the servomotor's inertia moment (*4)						
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev						
Attachments		17 bit encoder, oil seal						
Structure		Totally enclosed ventilated (protection degree: IP44)						
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)						
	Ambient Humidity	80% RH max. (non-condensing, storage 90% RH max. (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation	1000 meters or less above sea level						
	Vibration (*5)	X: 11.7 m/s^2 • Y: 29.4 m/s^2		X: 9.8 m/s^2 • Y: 9.8 m/s^2				
Weight kg(lb)	Standard	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)	250 (550.8)	335 (738)
	With Electromagnetic Brake	126 (227.6)	146 (321.7)	—	—	—	—	—
Cooling Fan Power	Voltage, Frequency	3-phase 380 to 420VAC 50/60Hz		3-phase 380 to 460VAC 50/60Hz				
	Input (W)	55 (50Hz) / 75 (60Hz)		65 (50Hz) / 85 (60Hz)		110 (50Hz) / 150 (60Hz)		
Cooling Fan Rated Current (A)		0.12 (50Hz) / 0.11 (60Hz)		0.12 (50Hz) / 0.14 (60Hz)		0.20 (50Hz) / 0.22 (60Hz)		

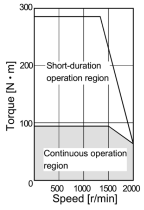
Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
3. The values apply when the parameter No. 0 (for MR-J2S-A type) or No. 2 (for MR-J2S-B type) is changed, and the cooling fan (approx. 10m^3/min, □92 x2x units) are installed.
4. Contact Mitsubishi Electric if the load/motor of inertia moment ratio exceeds the figure in the table.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.

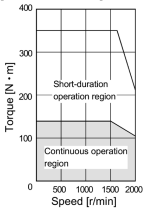
[HA-LFS11K1M4]



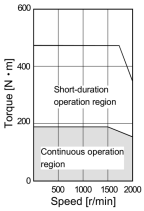
[HA-LFS15K1M4]



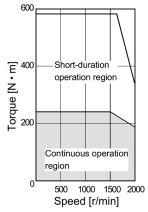
[HA-LFS22K1M4]



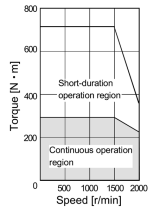
[HA-LFS30K1M4]



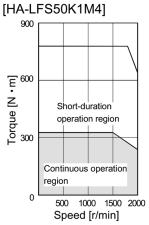
[HA-LFS37K1M4]



[HA-LFS45K1M4]



[HA-LFS50K1M4]



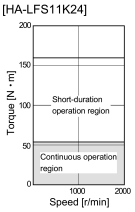
MR-J2S 380–480VAC HA-LFS 2000 r/min Series Servomotor Specifications

Servomotor Series		HA-LFS 2000 r/min Series (Low Inertia, Medium to Large Capacity)						
Models	Servomotor Model HA-LFS	11K24(B)	15K24(B)	22K24(B)	30K24	37K24	45K24	55K24
	Servo-Amp Model MR-J2S	11KA4/B4	15KA4/B4	22KA4/B4	30KA4/B4	37KA4/B4	45KA4/B4	55KA4/B4
	Converter Unit Model		—		MR-HP55KA4			
Power Facility Capacity kVA (*1)		16	22	33	48	59	71	87
Continuous Running Duty	Rated Output kW	11	15	22	30	37	45	55
	Rated Torque (N•m [oz•in])	52.5 (7434)	71.6 (10138.6)	105 (14868)	143 (20248.8)	177 (25063.2)	215 (30444)	263 (37240.8)
Maximum Torque (N•m [oz•in])		158 (22372.8)	215 (30444)	263 (37240.8)	358 (50692.8)	442 (62587.2)	537 (76039.2)	657 (93031.2)
Rated Speed r/min		2000						
Maximum Speed r/min		2000						
Permissible Instantaneous Speed r/min		2300						
Power Rate at Continuous Rated Torque kW/s		263	233	374	373	480	427	526
Rated Current (A)		32	39	56	83	102	131	143
Maximum Current (A)		96	117	140	208	255	328	358
Regeneration Braking Frequency (times/min) (*2)	GRZG400-5Ω (4) MR-RB6B-4 (800W) (*3)	186	—	—	—	—	—	—
	GRZG400-2.5Ω (5) MR-RB60-4 (1300W) (*3)	—	144	—	—	—	—	—
	GRZG400-2Ω (5) MR-RB6K-4 (1300W) (*3)	—	—	107	—	—	—	—
	MR-RB136-4 (1300W)	—	—	—	58	49	30	24
	MR-RB138-4 (3900W)	—	—	—	174	147	89	73
Moment of Inertia J (×10^{-4} kg·m^2) [WK^2 (oz·in^2)]	Standard	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)	1310 (7161.2)
	With Electromagnetic Brake	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—	—	—
Recommended Load/Motor Inertia Moment Ratio		Less than 10-times the servomotor's inertia moment (*4)						
Speed/Position Detector		Resolution per encoder/servomotor rotation: 131072 p/rev						
Attachments		17 bit encoder, oil seal						
Structure		Totally enclosed ventilated (protection degree: IP44)						
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)						
	Ambient Humidity	80% RH max. (non-condensing), storage 90% RH max. (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation	1000 meters or less above sea level						
	Vibration (*5)	X: 11.7 m/s^2 • Y: 29.4 m/s^2		X: 9.8 m/s^2 • Y: 9.8 m/s^2				
Weight kg (lb)	Standard	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)	250 (550.8)
	With Electromagnetic Brake	70 (154.2)	126 (277.6)	146 (321.7)	—	—	—	—
Cooling Fan Power	Voltage, Frequency	single-phase 200 to 220VAC/50Hz single-phase200 to 230VAC/60Hz	3-phase 380 to 420VAC 50/60Hz		3-phase 380 to 460VAC 50/60Hz			
	Input (W)	42 (50Hz)/54 (60Hz)	55 (50Hz)/75 (60Hz)		65 (50Hz)/85 (60Hz)		110 (50Hz)/150 (60Hz)	
Cooling Fan Rated Current (A)		0.21 (50Hz)/0.25 (60Hz)	0.12 (50Hz)/0.11 (60Hz)		0.12 (50Hz)/0.14 (60Hz)		0.20 (50Hz)/0.22 (60Hz)	

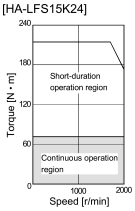
Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative brake frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating rpm varies with the frequency or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating and do not exceed the permissible value.
3. The values apply when the parameter No. 0 (for MR-J2S-A type) or No. 2 (for MR-J2S-B type) is changed, and the cooling fan (approx. 10m^3/min, □92 x2x units) are installed.
4. Contact Mitsubishi Electric if the load/motor of inertia moment ratio exceeds the figure in the table.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the anti-load side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.

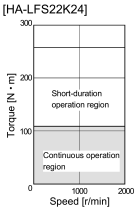
[HA-LFS11K24]



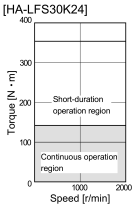
[HA-LFS15K24]



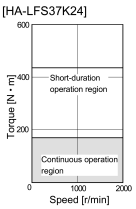
[HA-LFS22K24]



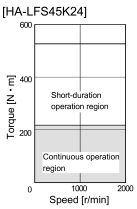
[HA-LFS30K24]



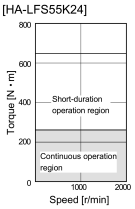
[HA-LFS37K24]



[HA-LFS45K24]



[HA-LFS55K24]



C MR-J2S Converter Unit 380–480VAC Type (Required for the 30kW – 55kW Amplifiers)

Model Number		MR-HP55KA4			
Amplifier Series		30KA/B4	37KA/B4	45KA/B4	55KA4/B4
Stocked Item		S			
Main Circuit Power Supply	Voltage/Frequency (*1)	3-phase 380 to 480VAC 50/60Hz			
	Permissible Voltage Fluctuation	3-phase 323 to 528VAC 50/60Hz			
	Permissible Frequency Fluctuation	±5% max.			
Control Circuit Power Supply	Voltage/Frequency (*1)	1-phase 380 to 420VAC 50/60Hz			
	Permissible Voltage Fluctuation	1-phase 323 to 528VAC 50/60Hz			
	Permissible Frequency Fluctuation	±5% max.			
	Power Consumption	50W			
Weight kg (lb)		22 (48.5)			

Notes:
1. Rated output capacity and rated speed of the servomotor used in combination with the servo-amp are as indicated when using the power-supply voltage and frequency listed. The output capacity and speed cannot be guaranteed when the power supply voltage is less than specified.

D Dynamic Brake (Recommended for 30kW~55kW amplifiers)

When using an 11kW or larger servo amplifier, use these dynamic brakes if the servomotor must be suddenly stopped during a power failure or when the protection circuit function engages.

Model Number		Stocked Item
DBU-11K-4	MR-J2S-11KA4/B4	S
DBU-22K-4	MR-J2S-15KA4/B4	S
	MR-J2S-22KA4/B4	
DBU-55K-4	MR-J2S-30KA4/B4	–
	MR-J2S-37KA4/B4	
	MR-J2S-45KA4/B4	
	MR-J2S-55KA4/B4	

E Cables

HC-SFS Motor Cables

Motor Type (IP65)	IP65 Power Cable (Unshielded) Model No. (*2)	Stocked Lengths (Unshielded)	IP65 Power Cable (Shielded) Model No.	IP65 Encoder Cable Model No. (*1)
HC-SF(S)524K	MR2S4-□M	2, 5, 10	MR2SW-SH-□M	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20, 30)
HC-SF(S)1024K				
HC-SF(S)1524K	MR3S4-□M	2, 5, 10	MR3SW-SH-□M	
HC-SF(S)2024K	MR4S4-□M	2, 5, 10	MR4SW-SH-□M	
HC-SF(S)3524K	MR5S-□M	2, 5, 10	MR5SW-SH-□M	
HC-SF(S)5024K				
HC-SF(S)7024K	MR6S-□M	2, 5, 10	MR6SW-SH-□M	
HC-SF(S)524BK	MR2SB4-□M	2, 5, 10	MR2SBW-SH-□M	
HC-SF(S)1024BK				
HC-SF(S)1524BK	MR3SB4-□M	2, 5, 10	MR3SBW-SH-□M	
HC-SF(S)2024BK	MR4S4-□M*	2, 5, 10	MR4SW-SH-□M *	
HC-SF(S)3524BK	MR5S-□M*	2, 5, 10	MR5SW-SH-□M *	
HC-SF(S)5024BK				
HC-SF(S)7024BK	MR6S-□M*	2, 5, 10	MR6SW-SH-□M *	

*= Must order separate brake cable listed below.
□ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = meter length, etc.)

Notes:
1. -L = Standard Flexibility; -H = Extended Flexibility. The flex type shown is standard. Opposing flex cable (-L) or (-H) also available.
2. IP65 on Revision B cable and later only.

Brake Cables

Description	IP65 Brake Cable (Unshielded) Model No. (*1)	IP65 Brake Cable (Shielded) Model No.
Brake Cable	MRBRKS-□M (Stocked Lengths: 2, 5, 10, 20)	MRBRKSW-SH-□M

□ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = meter length, etc.)

Note: IP65 on Revision B cable and later only.

HA-LFS Motor Cables

Motor Type (IP44)	Power Cable Model No.	Standard Encoder Cable Model No. (*1)
HA-LFS8014K	Hard-wired by user	MR-ENCBL□M-H (Stocked Lengths: 2, 5, 10, 20, 30)
HA-LFS8014BK*		
HA-LFS11K1M4K		
HA-LFS11K1M4BK*		
HA-LFS11K24K		
HA-LFS11K24BK*		
HA-LFS12K14K		
HA-LFS12K14BK		
HA-LFS15K14K		
HA-LFS15K1M4K		
HA-LFS15K1M4BK*		
HA-LFS15K24K		
HA-LFS15K24BK*		
HA-LFS20K14K		
HA-LFS22K1M4K		
HA-LFS22K24K		
HA-LFS22K24BK*		
HA-LFS25K14K		
HA-LFS30K141K		
HA-LFS30K1M4K		
HA-LFS30K24K		
HA-LFS37K14K		
HA-LFS37K1M4K		
HA-LFS37K24K		
HA-LFS45K1M4K		
HA-LFS45K24K		
HA-LFS50K1M4K		
HA-LFS55K24K		

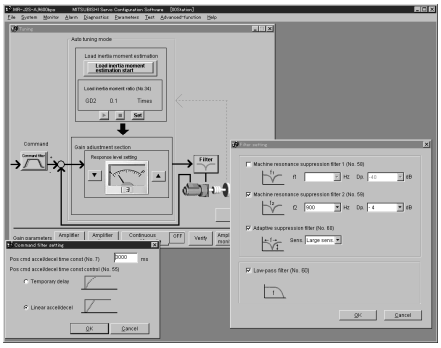
*= Must order separate brake cable listed at left.
□ = 2, 5, 10, 20 or 30 where (2 = 2 meter length, 5 = meter length, etc.)

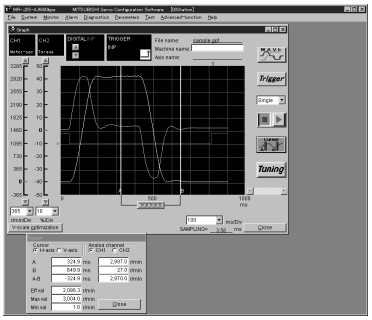
Note
1. -L = Standard Flexibility; -H = Extended Flexibility The flex type shown is standard. Opposing flex cable (-L) or (-H) also available.

F Software and Manuals

MR-Configurator Setup Software

This Windows®-based software package is used to setup, program and test the amplifier. Initial setup and programming is easy and quick with the user-friendly software, which has extensive help functions and drop-downs. MR-Configurator also has many diagnostic functions such as a machine simulator to aid in mechanical design, a machine analyzer to find resonant frequencies of the load and set notch filters, an alarm monitor with history data, and the ability to assign and monitor I/O.





Features:

- Can be set up using a personal computer.

  Works on Windows 95/98/NT/ME/2000 Professional, XP Professional*.
- Provides numerous monitor functions. Provides graph display function that enables display of servomotor status upon input signal triggers such as command pulses, droop pulses, and r/min.
- Allows servomotors to be tested easily from a personal computer.

* Windows is a registered trademark of the Microsoft Corporation.

Description	Model Number	Stocked Item
Windows Communication Software	MR-CONFIGURATOR	S
Communications Cable	MR-CPCATCBL3M	S

Manuals

Hardware Description	Model Number	Stocked Item
MR-J2 Super Series 400VAC Manual	SH(NA)030026	–
Servomotor Instruction Manual	SH(NA)3181	–
MR-HP30KA/55KA4 Converter Manual	SH(NA)030024	–

Note: Many of these manuals are available for free download from our website, www.meau.com

G System Options

External Regenerative Resistor Units

Servo-Amp Model (MR-J2S-)	Model Number — Regenerative Power [W] (Note)												
	MR-RB1L-4	MR-RB3M-4	MR-RB3H-4	MR-RB3G-4	MR-RB34-4	MR-RB5H-4	MR-RB5G-4	MR-RB54-4	MR-RB6B-4	MR-RB60-4	MR-RB6K-4	MR-RB136-4	MR-RB138-4 (x3)
Stocked Item	S	S	S	S	S	S	S	S	S	–	–	–	–
60A4/B4	100	X	X	X	X	X	X	X	X	X	X	X	X
100A4/B4	X	300	X	X	X	X	X	X	X	X	X	X	X
200A4/B4	X	X	300	X	X	500	X	X	X	X	X	X	X
350A4/B4	X	X	X	300	X	X	500	X	X	X	X	X	X
500A4/B4	X	X	X	300	X	X	500	X	X	X	X	X	X
700A4/B4	X	X	X	X	300	X	X	500	X	X	X	X	X
11KA4/B4	X	X	X	X	X	X	X	X	500 (800)	X	X	X	X
15KA4/B4	X	X	X	X	X	X	X	X	X	850 (1300)	X	X	X
22KA4/B4	X	X	X	X	X	X	X	X	X	X	850 (1300)	X	X
30KA4/B4	X	X	X	X	X	X	X	X	X	X	X	1300	3900
37KA4/B4	X	X	X	X	X	X	X	X	X	X	X	1300	3900
45KA4/B4	X	X	X	X	X	X	X	X	X	X	X	1300	3900
55KA4/B4	X	X	X	X	X	X	X	X	X	X	X	1300	3900

Note: This value is the regenerative power of the resistor and is not the rated power.

Regenerative Brake Unit / Brake Resistor Sets*

Brake Unit	Stocked Item	Resistor Unit	Stocked Item	Permissible Continuous Power (kw)	Max. Instantaneous Power (kw)	Applicable Servo Amplifier
FR-BU-H15K	–	FR-BR-H15K	–	0.99	16.5	MR-J2S-500A4/B4 MR-J2S-11KA4/B4
FR-BU-H30K	–	FR-BR-H30K	–	1.99	33.4	MR-J2S-15KA4/B4 MR-J2S-22KA4/B4
FR-BU-H55K	–	FR-BR-H55K	–	3.91	66.8	MR-J2S-700KA4/B4

***Note:** Regenerative Brake Unit and Regenerative Brake Resistor must be used together.

MR-J2S 380–480VAC

EMC Filters

Description	Model Type	Model Number	Stk Item
EMC Filters	MR-J2S-60□4 – 200□64	MF-3F480-010.230	–
	MR-J2S-350□4– 700□4	MF-3F480-025.230	–
	MR-J2S-11K□	TF3030C-TX	–
	MR-J2S-15K□	TF3040C-TX	–
	MR-J2S-22K□	TF3060C-TX	–
	MR-J2S-30K□ – 55K□	TF3150C-TX	–

Power Return Converters

Description	Model Type	Model Number	Stk Item
Power Return Converter	for 5kW amp	FR-RC-H15K	–
	for 7kW, 11kW and 15kW amps	FR-RC-H30K	–
	for 22kW amps	FR-RC-H55K	–

AC Power Factor Improving Reactors

Description	Model Type	Model Number	Stocked Item
AC Power Factor Improving Reactor	MR-J2S-60□4	MRL-00404	–
	MR-J2S-100□4	MRL-00404	–
	MR-J2S-200□4	MRL-00803	–
	MR-J2S-350□4	MRL-01803	–
	MR-J2S-500□4	MRL-02503	–
	MR-J2S-700□4	MRL-03503	S
	MR-J2S-11K□4	MRL-03503	S
	MR-J2S-15K□4	MRL-04503	–
	MR-J2S-22K□4	MRL-05503	–

DC Power Factor Improving Reactors

Description	Model Type	Model Number	Stocked Item
DC Power Factor Improving Reactor	MR-J2S-11K□4	DCA002505	–
	MR-J2S-15K□4	DCA004004	–
	MR-J2S-22K□4	DCA005003	–
	MR-J2S-30K□4	MR-DCL30K-4	–
	MR-J2S-37K□4	MR-DCL37K-4	–
	MR-J2S-45K□4	MR-DCL45K-4	–
	MR-J2S-55K□4	MR-DCL55K-4	–

Radio Noise Filter

Description	Model Type	Model Number	Stocked Item
Radio Noise Filter	All models	FR-BIF-H	–

Heat Sink Outside Mounting Attachment

Description	Model Type	Model Number	Stocked Item
Heat Sink Outside Mounting Attachment	for 11kW to 15kW amps	MR-JACN15K	–
	for 22kW amps	MR-JACN22K	–
	for 30kW amps	MR-ACN30K	–
	for 37kW to 55kW amps	MR-ACN55K	–
	for MR-HP55KA4	MR-ACNP55K	–

System Options

Description	Model Type	Model Number	Stk Item
Battery (Required for Absolute Positioning)	All MR-J2S Amplifier Models	MR-BAT	S
Terminal Block	All MR-J2S Amplifier Models	MR-TB20	S
Terminal Block Cable	All MR-J2S Amplifier Models	MR-J2TBL□M	0.5, 1
SSCNET Cable	MRJ2S□B to MR-J2S□B	MR-J2HBUS□M	0.5, 1, 3, 5
Converter Bus Cable (use 1m or less)	MRJ2S to Converter	MR-J2HBUS□M	0.5, 1
Terminator	MRJ2S□B and Converter	MR-A-TM	S
CN1A/B I/O Connector Kit (Kit Contains One Each CN1A & CN1B)	All MR-J2S Amplifier Models	MR-J2CN1	S
CN4 Connector Kit	MR-J2S, 11kW and larger	MR-J2CMP2	S
Converter D-I/O Connector CN1	MR-HP30KA/55KA4 Converter	MR-HP4CN1	S
CN1A/B I/O Pigtail Cables (One each optional for CN1A & CN1B)	All MR-J2S Amplifier Models	MR-CCN1CBL-3M (3m length) MR-CCN1CBL-5M (5m length)	S

Note: Terminal Block Cable can be ordered in 0.5 and 1 meter lengths.

Motor Power Connection Options

Description	Model Type	Model Number	Stocked Item
Power Connector Kit (Straight Plug)	HC-SFS 524, 1024, 1524	MR-MTR-CON-KIT-AS	S
	HC-SFS 2024, 3524, 5024	MR-MTR-CON-KIT-BS	S
	HC-SFS 7024	MR-MTR-CON-KIT-DS	S
Power Connector Kit (90° Angle Plug)	HC-SFS 524, 1024, 1524	MR-MTR-CON-KIT-A	S
	HC-SFS 2024, 3524, 5024	MR-MTR-CON-KIT-B	S
	HC-SFS 7024	MR-MTR-CON-KIT-D	S
Power Connector Kit (IP65 & "CE") (Straight Plug)	HC-SFS 524, 1024, 1524	MR-PWCNS1	S
	HC-SFS 2024, 3524, 5024	MR-PWCNS2	S
	HC-SFS 7024	MR-PWCNS3	S

Motor Brake Connector Kits

Description	Model Type	Model Number	Stocked Item
Brake Connector Kit (IP65 & "CE") (Instead of MRBRKS-□M)	Connectors only (instead of MRBRKS-□M cable)	MR-BKCN	S

Note: Model numbers with □ can be ordered in 2, 5 and 10 meter lengths.

Motor Encoder Connector Kits

Description	Model Type	Model Number	Stocked Item
Encoder Connector Kit (IP20)	All HC-SFS; HA-LFS	MR-J2CNS	S
Encoder Connector Kit	All HC-SFS; HA-LFS	MR-ENCNS	S

MR-J2S Motor Shaft Dimensions

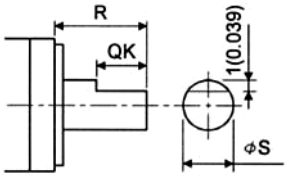
Servo Motor Model	Shaft Shape	
	Keyway	D Cut
HC-MFS053 • 13	—	✓
HC-MFS23 – 73	✓ (*1)	—
HA-FF053 • 13	—	✓
HA-FF23 – 63	✓ (*2)	—
HC-SFS81 – 301 HC-SFS52 – 702 HC-SFS53 – 353 HC-SFS524 – 7024	✓ (*2)	—

Servo Motor Model	Shaft Shape	
	Keyway	D Cut
HC-RFS103 – 503	✓ (*2)	—
HC-UFS72 – 502	✓ (*2)	—
HC-UFS13	—	✓
HC-UFS23 – 73	✓ (*1)	—
HC-KFS053 • 13	—	✓
HC-KFS23 – 73	✓ (*1)	—
HC-LFS	✓ (*2)	—
HA-LFS	✓ (*2)	—

Notes:
1. With a key.
2. Without a key.

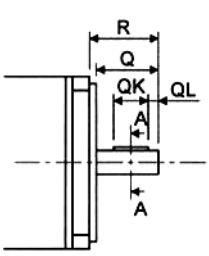
MR-J2S • D Cut Motor Shaft Dimensions

Servo Motor Model	Variable Dimensions		
	R	QK	S
HC-KFS053D • 13D HC-MFS053D • 13D	25 (0.98)	20.5 (0.81)	8h (0.32)
HA-FF053D • 13D	30 (1.178)	25.5 (1.0)	8h (0.32)
HC-UFS13D	25 (0.98)	17.5 (0.69)	8h (0.32)

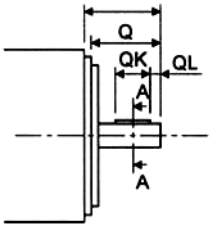


D Cut

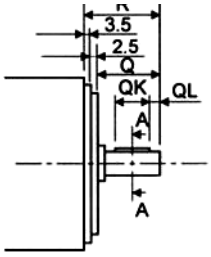
With Key



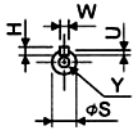
HC-MF(S)23K to 73K
HC-KF23K · 43K
HC-KFS23K to 73K



HC-UF(S)23K · 43K



HC-UF(S) 73K



Section A-A

Servo Motor Model	Variable Dimensions								
	S	R	Q	W	QK	QL	U	H	Y
HC-MFS23K • 43K	14h6 (0.554)	30 (1.18)	27 (1.06)	5 (0.20)	20 (0.79)	3 (0.12)	3 (0.12)	5 (0.20)	M4 Depth 15 (0.59)
HC-MFS73K	19h6 (0.7480)	40 (1.57)	37 (1.46)	6 (0.24)	25 (0.98)	5 (0.20)	3.5 (0.14)	6 (0.24)	M5 Depth 20 (0.79)
HC-UFS23K • 43K	14h6 (0.554)	30 (1.18)	23.5 (0.93)	5 (0.20)	20 (0.79)	3 (0.12)	3 (0.12)	5 (0.20)	M4 Depth 15 (0.59)
HC-UFS73K	19h6 (0.7480)	40 (1.57)	32.5 (1.28)	6 (0.24)	25 (0.98)	5 (0.20)	3.5 (0.14)	6 (0.24)	M5 Depth 20 (0.79)
HC-KFS23K • 43K	14h6 (0.554)	30 (1.18)	27 (1.06)	5 (0.20)	20 (0.79)	3 (0.12)	3 (0.12)	5 (0.20)	M4 Depth 15 (0.59)
HC-KFS73K	19h6 (0.7480)	40 (1.57)	37 (1.46)	6 (0.24)	25 (0.98)	5 (0.20)	3.5 (0.14)	6 (0.24)	M5 Depth 20 (0.79)

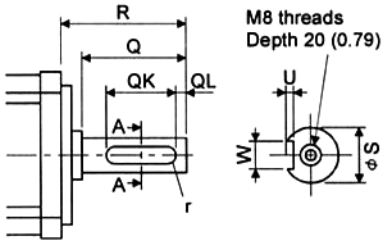
Unit of Measure: mm (in)

Unit of Measure: mm (in)

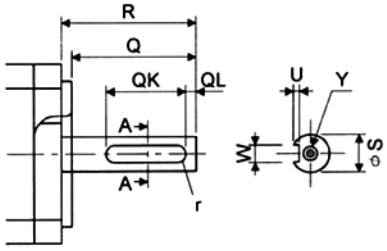
MR-J2S • Motor Shaft Dimensions Without Key

Servo Motor Model	Variable Dimensions											
	S	R	Q	W	QK	QL	U	r	Drawing	Key Dimension	Model Number	Stk Item
HC-SFS52(4)K – 152(4)K HC-SFS53K – 153K HC-LFS52K – 152K	24h6 (0.94)	55 (2.17)	50 (1.97)	$8^{0}_{-0.036}$ (0.31)	36 (1.42)	5 (0.20)	$4^{+0.2}_{0}$ (0.16)	4 (0.16)	A	8 x 7 x 28	MTR KEY 8-7-28	S
HC-SFS121K – 301K HC-SFS202(4)K – 702(4)K HC-SFS203K • 353K HC-LFS202K • 302K	$35^{+0.010}_{0}$ (1.38)	79 (3.11)	75 (2.95)	$10^{0}_{-0.036}$ (0.39)	55 (2.17)	5 (0.20)	$5^{+0.2}_{0}$ (0.20)	5 (0.20)		10 x 8 x 45	MTR KEY 10-8-45	S
HC-RFS103K – 203K	24h6 (0.94)	45 (1.79)	40 (1.57)	$8^{0}_{-0.036}$ (0.31)	25 (0.98)	5 (0.20)	$4^{+0.2}_{0}$ (0.16)	4 (0.16)		8 x 7 x 16	MTR KEY 8-7-16	S
HC-RFS353K – 503K	28h6 (1.10)	63 (2.48)	58 (2.28)	$8^{0}_{-0.036}$ (0.31)	53 (2.09)	3 (0.12)	$4^{+0.2}_{0}$ (0.16)	4 (0.16)		8 x 7 x 45	MTR KEY 8-7-45	S
HC-UFS72K	22h6 (0.87)	55 (2.17)	50 (1.97)	$6^{0}_{-0.036}$ (0.24)	42 (1.65)	3 (0.12)	$3.5^{+0.1}_{0}$ (0.14)	3 (0.13)		6 x 6 x 36	MTR KEY 6-6-36	S
HC-UFS152K	28h6 (1.10)	55 (2.17)	50 (1.97)	$8^{0}_{-0.036}$ (0.31)	45 (1.77)	5 (0.20)	$4^{+0.2}_{0}$ (0.16)	4 (0.16)		8 x 7 x 36	MTR KEY 8-7-36	S
HC-UFS202K – 502K	35h6 (1.38)	65 (2.56)	60 (2.36)	$10^{0}_{-0.036}$ (0.39)	55 (2.17)	5 (0.20)	$5^{+0.2}_{0}$ (0.20)	5 (0.20)		10 x 8 x 45	MTR KEY 10-8-45	S

Servo Motor Model	Variable Dimensions									
	S	R	Q	W	QK	QL	U	r	Y	Drawing
HA-LFS502K • 702K • 11K2(4)K HA-LFS601(4)K HA-LFS701M(4)K	42h6 (1.65)	85 (3.35)	80 (3.15)	$12^{0}_{-0.01}$ (0.47)	70 (2.76)	5 (0.20)	$5^{+0.2}_{0}$ (0.20)	6 (0.24)	Same as the straight shaft of the standard motor.	A
HA-LFS801(4)K • 12K1(4)K HA-LFS11K1M(4)K • 15K1M(4)K HA-LFS15K2(4)K • 22K2(4)K	55m6 (2.17)	110 (4.33)	100 (3.94)	$16^{0}_{-0.04}$ (0.63)	90 (3.54)	5 (0.20)	$6^{+0.2}_{0}$ (0.24)	8 (0.31)		
HA-LFS30K2(4)K • 37K2(4)K HA-LFS15K1(4)K • 20K1(4)K HA-LFS22K1M(4)K • 30K1M(4)K HA-LFS30K2(4)K • 37K2(4)K	60m6 (2.36)	140 (5.51)	140 (5.51)	$18^{0}_{-0.03}$ (0.71)	128 (5.04)	6 (0.24)	$7^{+0.2}_{0}$ (0.28)	9 (0.35)		B
HA-LF45K24K • 55K24K HA-LFS25K1(4)K • 30K1(4) HA-LFS37K1M(4)K • 30K1M(4)K HA-LFS30K2(4)K • 37K2(4)K	65m6 (2.56)	140 (5.51)	140 (5.51)	$18^{0}_{-0.03}$ (0.71)	128 (5.04)	6 (0.24)	$7^{+0.2}_{0}$ (0.28)	9 (0.35)		
HA-LFS37K1(4)K HA-LFS50K1M4K	80m6 (3.15)	170 (6.69)	170 (6.69)	$22^{0}_{-0.04}$ (0.87)	147 (5.79)	11 (0.43)	$9^{+0.2}_{0}$ (0.35)	11 (0.43)		



Drawing A

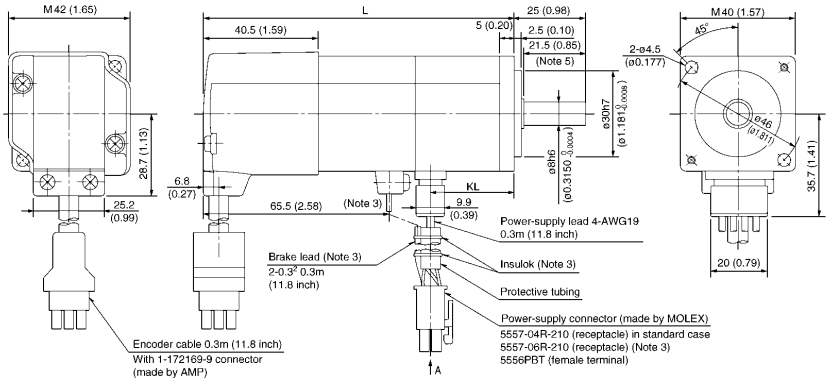


Drawing B

MR-J2S HC-KFS/MFS Series

●HC-KFS053 (B), HC-KFS13 (B)
●HC-MFS053 (B), HC-MFS13 (B)

Unit: mm (inch)



Standard Power-supply connector pin assignment

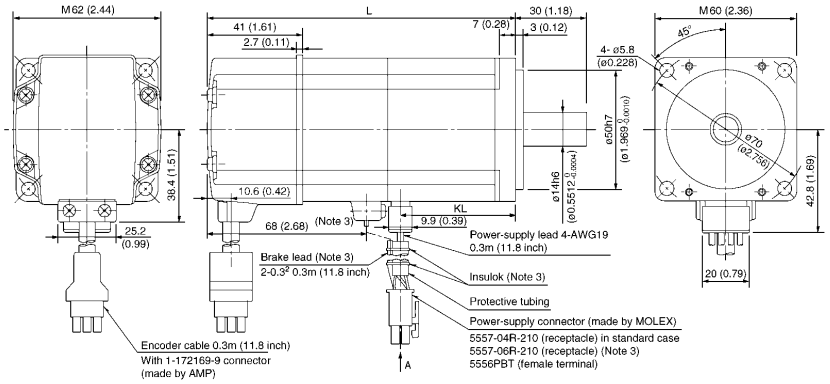
Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth

with Brake Power-supply connector pin assignment

Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth
5	B1
6	B2

Model	Variable dimensions	
	L	KL
HC-KFS053 (B) HC-MFS053 (B)	81.5 (3.21) <109.5 (4.31)>	29.5 (1.16)
HC-KFS13 (B) HC-MFS13 (B)	96.5 (3.80) <124.5 (4.90)>	44.5 (1.75)

●HC-KFS23 (B), HC-KFS43 (B)
●HC-MFS23 (B), HC-MFS43 (B)



Standard Power-supply connector pin assignment

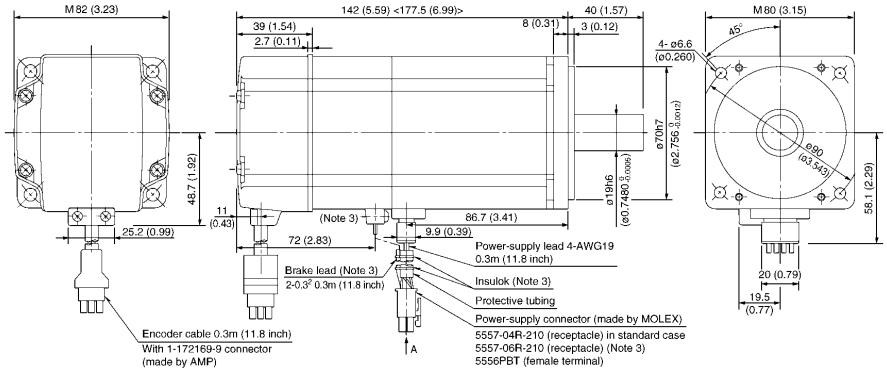
Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth

with Brake Power-supply connector pin assignment

Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth
5	B1
6	B2

Model	Variable dimensions	
	L	KL
HC-KFS23 (B) HC-MFS23 (B)	99.5 (3.92) <131.5 (5.18)>	49.1 (1.93)
HC-KFS43 (B) HC-MFS43 (B)	124.5 (4.90) <156.5 (6.16)>	72.1 (2.84)

●HC-KFS73 (B), HC-MFS73 (B)



Standard Power-supply connector pin assignment

Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth

with Brake Power-supply connector pin assignment

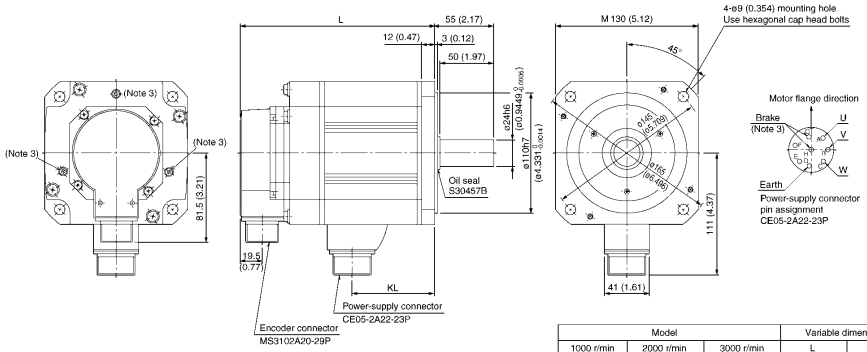
Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth
5	B1
6	B2

Notes:
1. Use a friction coupling to fasten the load.
2. Dimensions inside < > are for models with electromagnetic brake.
3. Only for models with electromagnetic brake.
4. For dimensions where there is no tolerance listed, use general tolerance.
5. For HC-KFS053 (B) and KFS13 (B).

MR-J2S HC-SFS Series

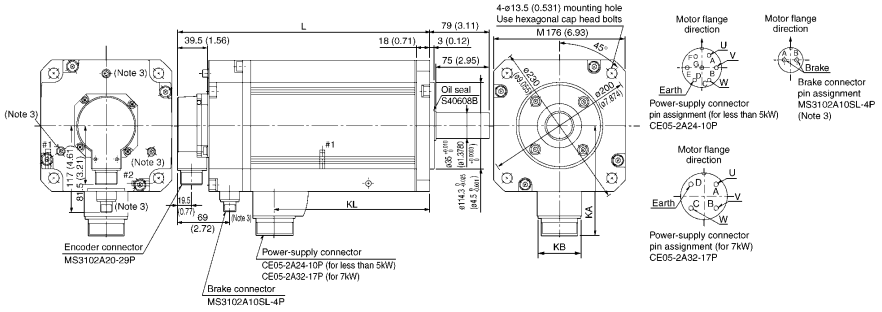
Unit: mm (inch)

- HC-SFS81 (B)
- HC-SFS52 (B), HC-SFS102 (B), HC-SFS152 (B), HC-SFS524 (B), HC-SFS1024 (B), HC-SFS1524 (B)
- HC-SFS53 (B), HC-SFS103 (B), HC-SFS153 (B)



Model			Variable dimensions	
1000 r/min	2000 r/min	3000 r/min	L	KL
—	HC-SFS52 (B) HC-SFS524 (B)	HC-SFS53 (B)	120 (4.72) <153 (6.02)>	51.5 (2.03)
—	HC-SFS102 (B) HC-SFS1024 (B)	HC-SFS103 (B)	145 (5.71) <178 (7.01)>	76.5 (3.01)
HC-SFS81 (B)	HC-SFS152 (B) HC-SFS1524 (B)	HC-SFS153 (B)	170 (6.69) <203 (7.99)>	101.5 (4.00)

- HC-SFS121 (B), HC-SFS201 (B), HC-SFS301 (B)
- HC-SFS202 (B), HC-SFS352 (B), HC-SFS502 (B), HC-SFS702 (B), HC-SFS2024 (B), HC-SFS3524 (B), HC-SFS5024 (B), HC-SFS7024 (B)
- HC-SFS203 (B), HC-SFS353 (B)



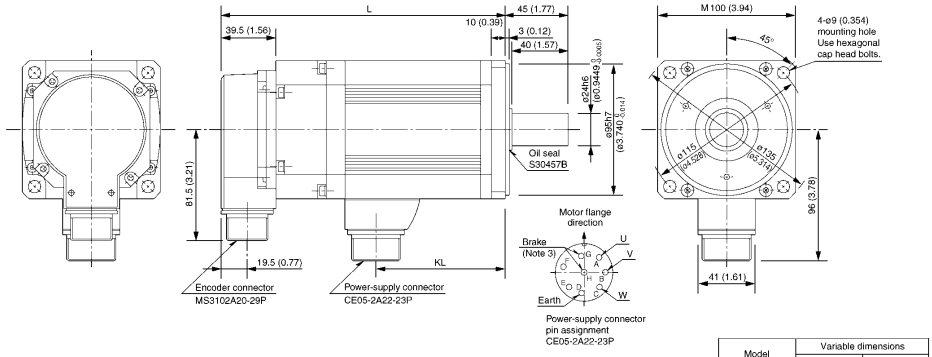
Model			Variable dimensions			
1000 r/min	2000 r/min	3000 r/min	L	KL	KA	KB
HC-SFS121 (B)	HC-SFS202 (B) HC-SFS2024 (B)	HC-SFS203 (B)	145 (5.71) <193 (7.60)>	68.5 (2.70)	142 (5.59)	46 (1.81)
HC-SFS201 (B)	HC-SFS352 (B) HC-SFS3524 (B)	HC-SFS353 (B)	187 (7.36) <235 (9.25)>	110.5 (4.35)	142 (5.59)	46 (1.81)
HC-SFS301 (B)	HC-SFS502 (B) HC-SFS5024 (B)	—	208 (8.19) <256 (10.08)>	131.5 (5.18)	142 (5.59)	46 (1.81)
—	HC-SFS702 (B) HC-SFS7024 (B)	—	292 (11.50) <340 (13.39)>	210.5 (8.29)	150 (5.91)	58 (2.28)

Notes:
1. Use a friction coupling to fasten the load.
2. Dimensions inside < > are for models with electromagnetic brake.
3. Only for models with electromagnetic brake.
4. For dimensions where there is no tolerance listed, use general tolerance.

MR-J2S HC-RFS Series

Unit: mm (inch)

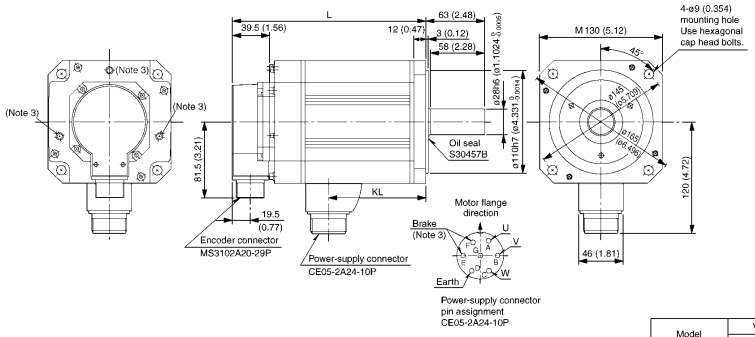
- HC-RFS103 (B), HC-RFS153 (B), HC-RFS203 (B)



Model	Variable dimensions	
	L	KL
HC-RFS103 (B)	147 (5.79) <185 (7.28)>	71 (2.80)
HC-RFS153 (B)	172 (6.77) <210 (8.27)>	96 (3.78)
HC-RFS203 (B)	197 (7.76) <235 (9.25)>	121 (4.76)

MR-J2S HC-RFS Series

● HC-RFS353 (B), HC-RFS503 (B)



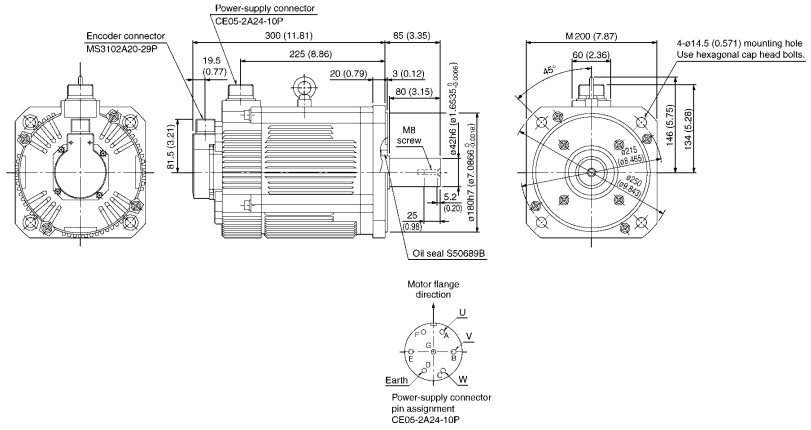
Model	Variable dimensions	
	L	KL
HC-RFS353 (B)	217 (8.54) <254 (10.00)>	148 (5.83)
HC-RFS503 (B)	274 (10.79) <311 (12.24)>	205 (8.07)

Notes:
1. Use a friction coupling to fasten the load.
2. Dimensions inside < > are for models with electromagnetic brake.
3. Only for models with electromagnetic brake.
4. For dimensions where there is no tolerance listed, use general tolerance.

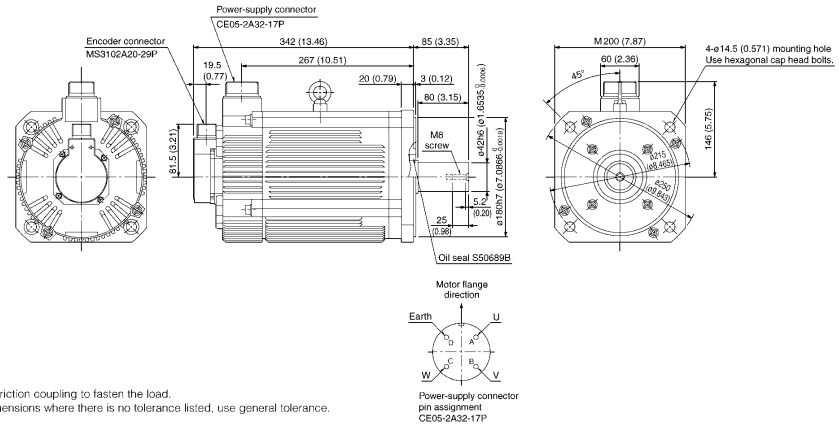
MR-J2S HA-LFS Series

● HA-LFS502

Unit: mm (inch)



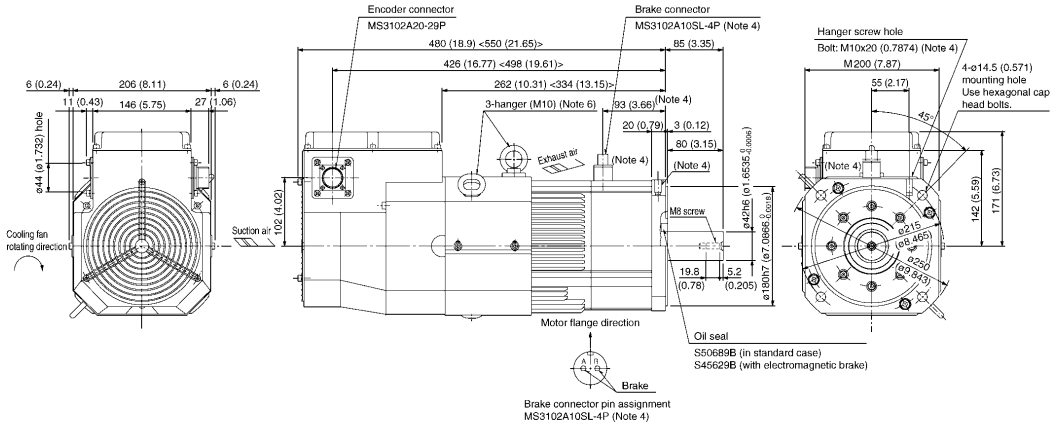
● HA-LFS702



Notes:
1. Use a friction coupling to fasten the load.
2. For dimensions where there is no tolerance listed, use general tolerance.

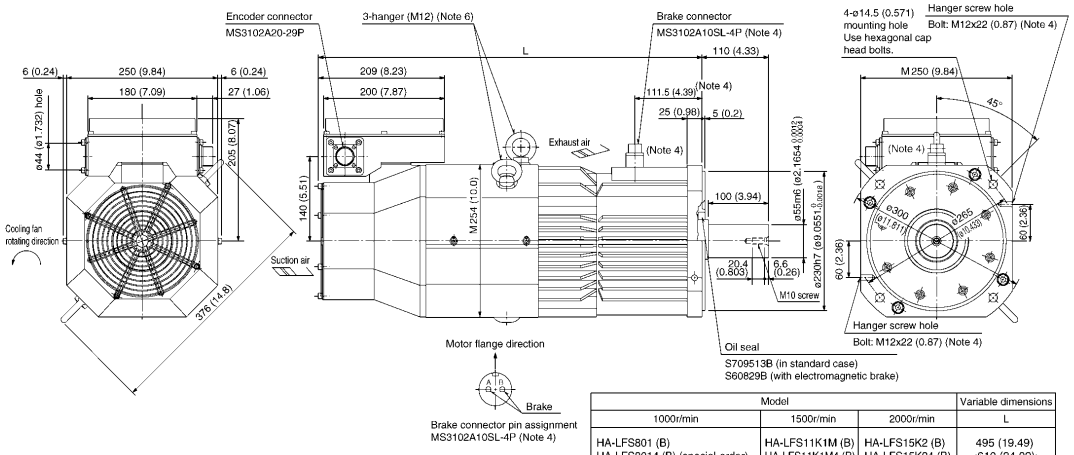
● HA-LFS601 (B)
● HA-LFS701M (B)
● HA-LFS11K2 (B), HA-LFS11K24 (B)

Unit: mm (inch)



* When the motor is used without a hanger, plug the thread hole with a bolt of M10×20 (0.7874) or less.

● HA-LFS801 (B), HA-LFS12K1 (B), HA-LFS8014 (B) (special-order) (Note 7), HA-LFS12K14 (B) (special-order) (Note 7)
● HA-LFS11K1M (B), HA-LFS15K1M (B), HA-LFS11K1M4 (B), HA-LFS15K1M4 (B)
● HA-LFS15K2 (B), HA-LFS22K2 (B), HA-LFS15K24 (B), HA-LFS22K24 (B)



Model			Variable dimensions
1000r/min	1500r/min	2000r/min	L
HA-LFS801 (B) HA-LFS8014 (B) (special-order)	HA-LFS11K1M (B) HA-LFS11K1M4 (B)	HA-LFS15K2 (B) HA-LFS15K24 (B)	495 (19.49) <610 (24.02)>
HA-LFS12K1 (B) HA-LFS12K14 (B) (special-order)	HA-LFS15K1M (B) HA-LFS15K1M4 (B)	HA-LFS22K2 (B) HA-LFS22K24 (B)	555 (21.85) <670 (26.38)>

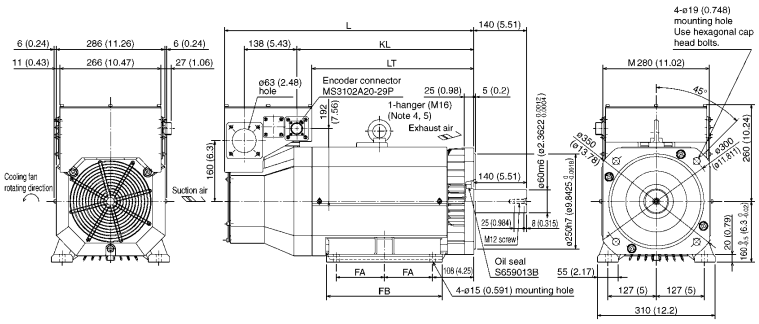
* When the motor is used without a hanger, plug the thread hole with a bolt of M12x20 (0.7874) or less.

Notes:
1. Use a friction coupling to fasten the load.
2. For dimensions where there is no tolerance listed, use general tolerance.
3. Dimensions inside < > are for models with electromagnetic brake.
4. Only for models with electromagnetic brake.
5. Leave a clearance of at least 100mm between the motor's suction side and wall.
6. Make sure that oil, water and dust, etc., will not enter the motor from the lead-in hole.
7. The motors are special-order products. Contact Mitsubishi for details on the servo amplifier type and the types of servo motors that are combined with the servo amplifier, and for information on the delivery schedule.

MR-J2S HA-LFS Series

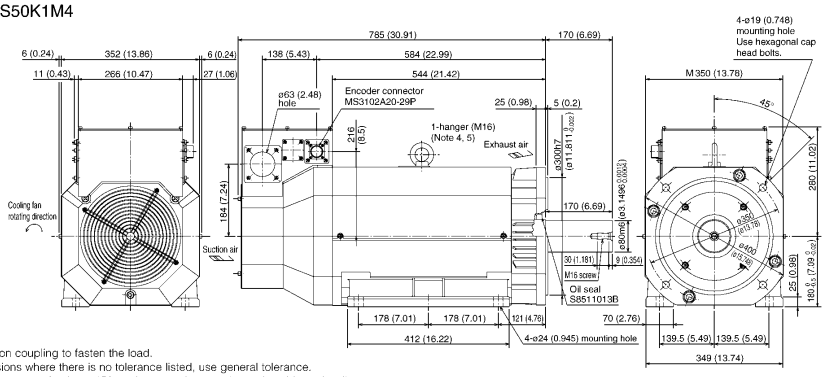
Unit: mm (inch)

● HA-LFS30K1M
● HA-LFS30K2, HA-LFS37K2



Model		Variable dimensions				
1500r/min	2000r/min	L	LT	KL	FA	FB
—	HA-LFS30K2	615 (24.21)	381 (15)	421 (16.57)	105 (4.13)	260 (10.24)
HA-LFS30K1M	HA-LFS37K2	660 (25.98)	426 (16.77)	466 (18.35)	127 (5)	304 (11.97)

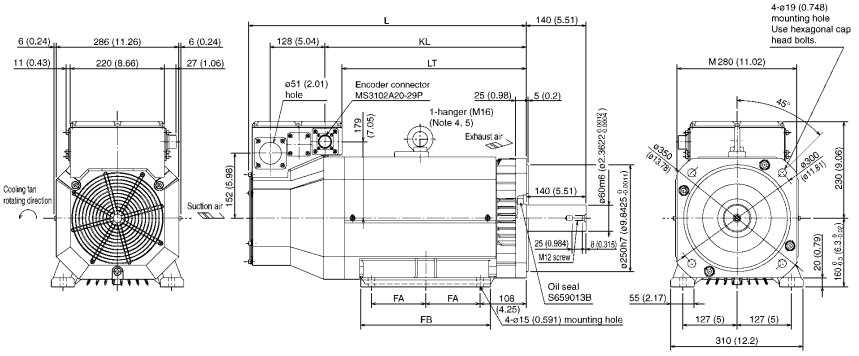
● HA-LFS37K1, HA-LFS37K14
● HA-LFS50K1M4



Notes:
1. Use a friction coupling to fasten the load.
2. For dimensions where there is no tolerance listed, use general tolerance.
3. Leave a clearance of at least 150mm between the motor's suction side and wall.
4. When the motor is used without a hanger, plug the threaded hole with a bolt of M16x20 (0.7874) or less.
5. Make sure that oil, water and dust, etc., will not enter the motor from the lead-in hole.

Unit: mm (inch)

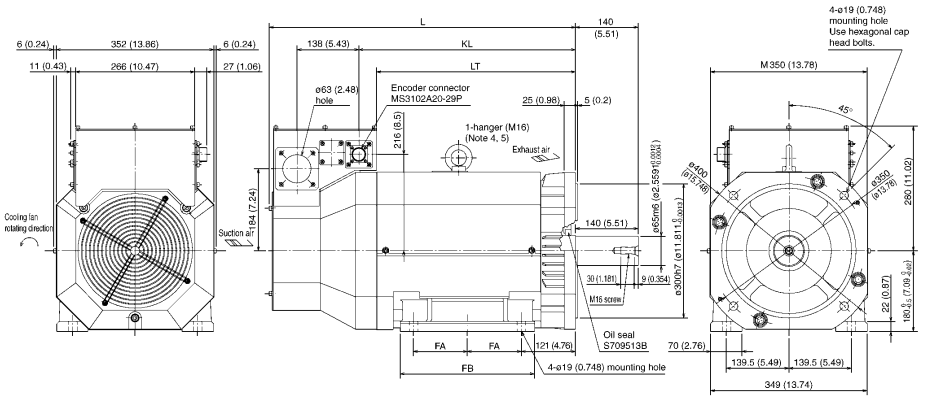
● HA-LFS15K1, HA-LFS20K1, HA-LFS15K14 (special-order) (Note 6), HA-LFS20K14 (special-order) (Note 6)
● HA-LFS22K1M, HA-LFS22K1M4, HA-LFS30K1M4
● HA-LFS30K24, HA-LFS37K24



Model			Variable dimensions				
1000r/min	1500r/min	2000r/min	L	LT	KL	FA	FB
HA-LFS15K1 HA-LFS15K14 (special-order)	HA-LFS22K1M HA-LFS22K1M4	HA-LFS30K24	605 (23.82)	386 (15.2)	426 (16.77)	105 (4.13)	260 (10.24)
HA-LFS20K1 HA-LFS20K14 (special-order)	HA-LFS30K1M4	HA-LFS37K24	650 (25.59)	431 (16.97)	471 (18.54)	127 (5)	304 (11.97)

MR-J2S HA-LFS Series

- HA-LFS25K1, HA-LFS30K1, HA-LFS25K14 (special-order) (Note 6), HA-LFS30K14
- HA-LFS37K1M, HA-LFS37K1M4, HA-LFS45K1M4
- HA-LFS45K24, HA-LFS55K24



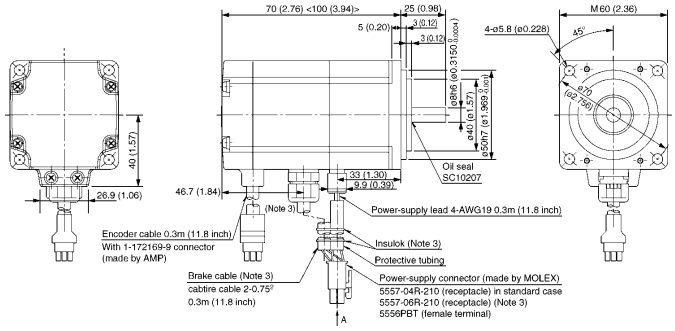
Model			Variable dimensions				
1000r/min	1500r/min	2000r/min	L	LT	KL	FA	FB
HA-LFS25K1 HA-LFS25K14 (special-order)	HA-LFS37K1M HA-LFS37K1M4	HA-LFS45K24	640 (25.2)	399 (15.71)	439 (17.28)	101.5 (4)	262 (10.31)
HA-LFS30K1 HA-LFS30K14	HA-LFS45K1M4	HA-LFS55K24	685 (26.97)	444 (17.48)	484 (19.06)	120.5 (4.74)	300 (11.81)

Notes:
1. Use a friction coupling to fasten the load.
2. For dimensions where there is no tolerance listed, use general tolerance.
3. Leave a clearance of at least 150mm between the motor's suction side and wall.
4. When the motor is used without a hanger, plug the threaded hole with a bolt of M16x20 (0.7874) or less.
5. Make sure that oil, water and dust, etc., will not enter the motor from the lead-in hole.
6. The motors are special-order products. Contact Mitsubishi for details on the servo amplifier type and the types of servo motors that are combined with the servo amplifier, and for information on the delivery schedule.

MR-J2S HC-UFS Series

- HC-UFS13 (B)

Unit: mm (inch)



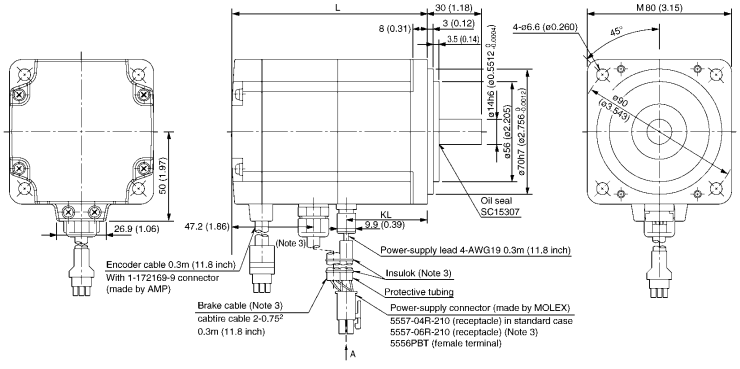
Standard Power-supply connector pin assignment

Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth

with Brake Power-supply connector pin assignment

Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth
5	B1
6	B2

- HC-UFS23 (B), HC-UFS43 (B)



Standard Power-supply connector pin assignment

Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth

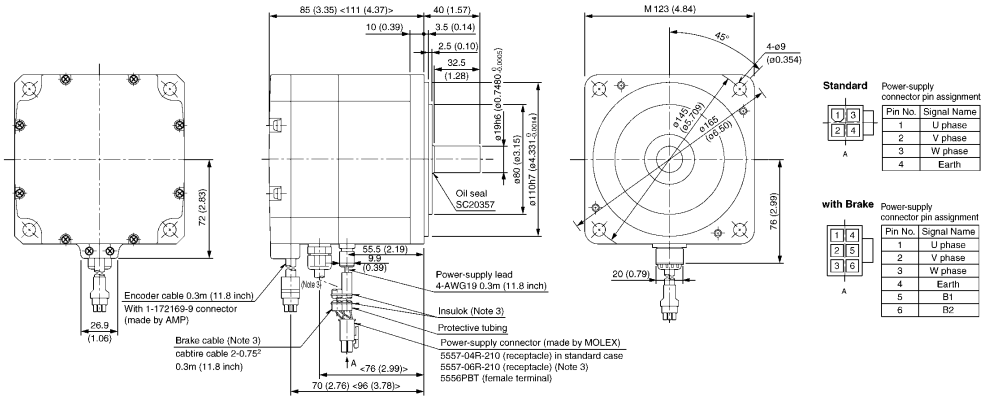
with Brake Power-supply connector pin assignment

Pin No.	Signal Name
1	U phase
2	V phase
3	W phase
4	Earth
5	B1
6	B2

Model	Variable dimensions	
	L	KL
HC-UFS23 (B)	77 (3.03) <111 (4.37)>	43.8 (1.72)
HC-UFS43 (B)	92 (3.62) <126 (4.96)>	58.8 (2.31)

MR-J2S HC-UFS Series

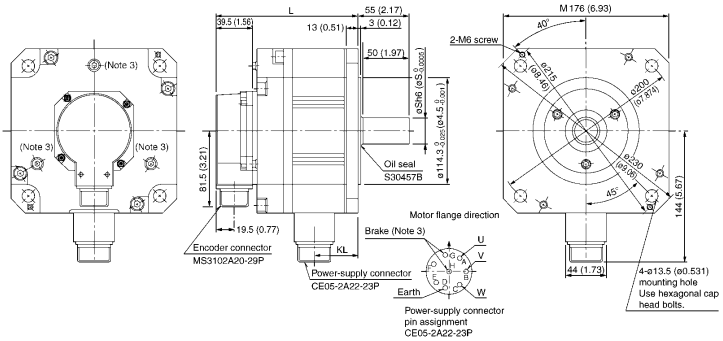
● HC-UFS73 (B)



Notes:
1. Use a friction coupling to fasten the load.
2. Dimensions inside < > are for models with electromagnetic brake.
3. Only for models with electromagnetic brake.
4. For dimensions where there is no tolerance listed, use general tolerance.

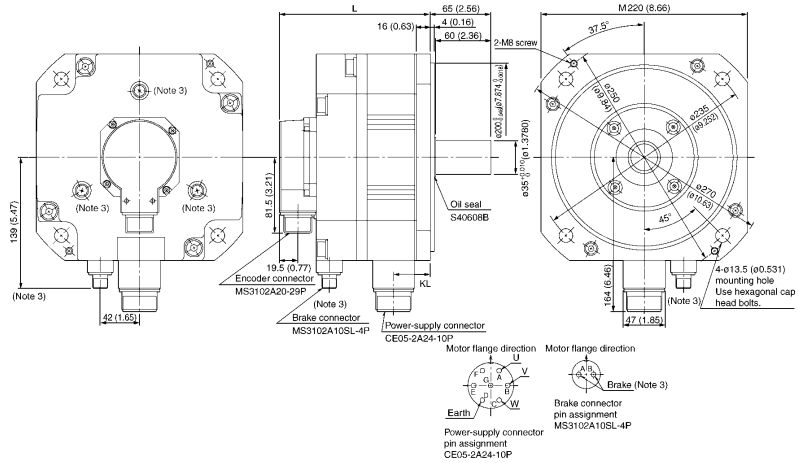
● HC-UFS72 (B), HC-UFS152 (B)

Unit: mm (inch)



Model	Variable dimensions		
	L	KL	S
HC-UFS72 (B)	110.5 (4.35) <144 (5.67)>	38 (1.50)	22 (0.8661)
HC-UFS152 (B)	120 (4.72) <153.5 (6.04)>	47.5 (1.87)	28 (1.1024)

● HC-UFS202 (B), HC-UFS352 (B), HC-UFS502 (B)



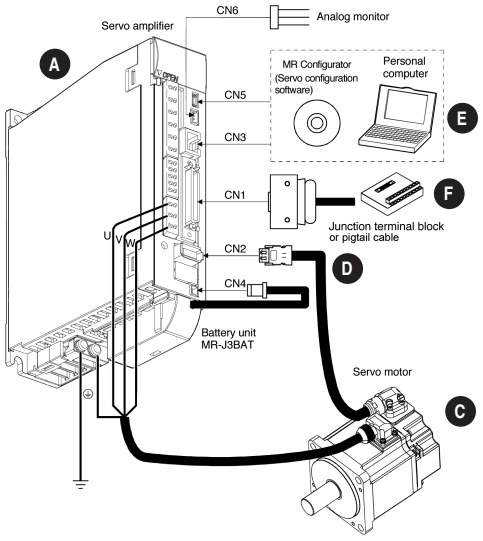
Model	Variable dimensions	
	L	KL
HC-UFS202 (B)	118 (4.65) <161 (6.34)>	42.5 (1.67)
HC-UFS352 (B)	142 (5.59) <185 (7.28)>	66.5 (2.62)
HC-UFS502 (B)	166 (6.54) <209 (8.23)>	90.5 (3.56)

Notes:
1. Use a friction coupling to fasten the load.
2. Dimensions inside < > are for models with electromagnetic brake.
3. Only for models with electromagnetic brake.
4. For dimensions where there is no tolerance listed, use general tolerance.

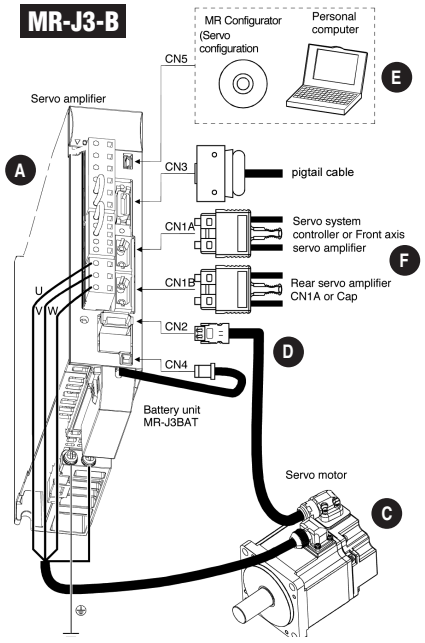
MR-J3 Servomotors and Amplifiers

With a capacity range of 50W to 55kW, we reduced the size of both the amplifier and motor, added a high resolution encoder and advanced auto-tuning and vibration control. The J3's high torque motor can operate at up to 6000 rpm, and with a speed frequency response of 900 Hz. Twenty percent smaller than its predecessor, the J3's high resolution 262,144ppr encoder is mounted as standard to provide stability even at low speeds. Mitsubishi Electric Automation's original model adaptive control and ever-evolving automatic tuning function makes precise tuning easy and the J3's advanced vibration control suppresses vibrations automatically. Set-up, diagnostics, and tuning are easy, thanks to MR-Configurator, a Windows™-based software package. MR-Configurator has many improved diagnostic functions, such as an advanced machine analyzer, software oscilloscope, and high speed monitor. A parameter setting window makes start-up easy, and a USB interface enables high-speed sampling and long-term wavelength measurement. The MR-J3 supports the following control methods: Position, Speed, Torque, SSCNET III Network, CC-Link and RS-485 Multi Drop.

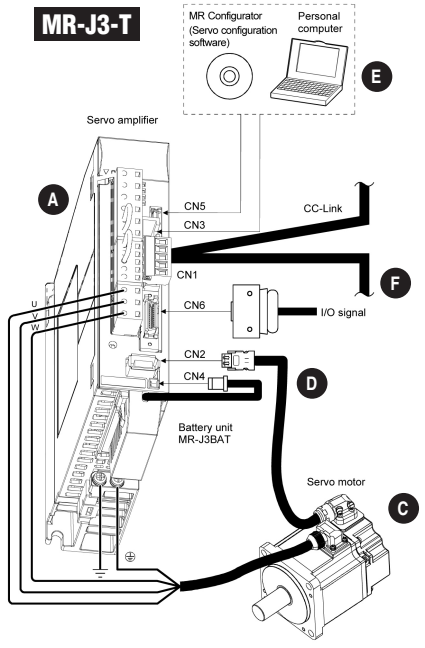
MR-J3-A



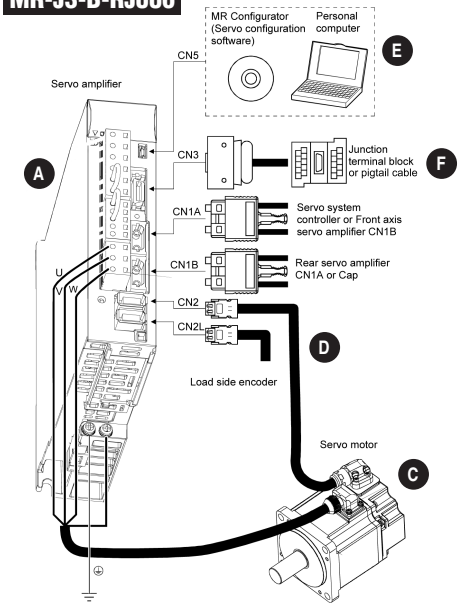
MR-J3-B



MR-J3-T



MR-J3-B-RJ006



A. Amplifier 114
B. Converter (Required for 30KW ~ 55KW 200/400V amplifiers) (Not shown in above diagrams) 127
C. Motor 128
D. Cables and Connectors 143
E. Software and Manuals 153
F. Optional Accessories 153

Ⓐ MR-J3 Amplifiers

Amplifier Types

Type		Interface						Control Mode					Setup Software	Model	Power	Source Capacity (*1)	Compatible Motor Series						
		Pulse Train	Analog	DIO	SSCNET III	RS-422 Multi-Drop	CC-Link	Position	Speed	Torque	Position Functions	Fully Closed Loop Control					HF-KP	HF-MP	HF-SP	HC-LP	HC-RP	HC-UP	HA-LP
A-Type	General Purpose Interface	✓	✓			✓		✓	✓	✓			✓	MR-J3-☐A	3-Phase AC 200V	0.05 ~37kW	✓	✓	✓	✓	✓	✓	✓
														MR-J3-☐A1	1-Phase AC 100V	0.05 ~0.4kW	✓	✓					
														MR-J3-☐A4	3-Phase AC 400V	0.5 ~55kW			✓				✓
B-Type	Advanced Serial Bus SSCNET III				✓			✓					✓	MR-J3-☐B	3-Phase AC 200V	0.05 ~37kW	✓	✓	✓	✓	✓	✓	✓
														MR-J3-☐B1	1-Phase AC 100V	0.05 ~0.4kW	✓	✓					
														MR-J3-☐B4	3-Phase AC 400V	0.5 ~55kW			✓				✓
	Fully Closed Loop Advanced Serial Bus SSCNETIII				✓			✓				✓	✓	MR-J3-☐B-RJ006	3-Phase AC 200V	0.05 ~22kW	✓	✓	✓	✓	✓	✓	✓
														MR-J3-☐B1-RJ006	1-Phase AC 100V	0.05 ~0.4kW	✓	✓					
														MR-J3-☐B4-RJ006	3-Phase AC 400V	0.5 ~22kW			✓				✓
T-Type	Built-In CC-Link Positioning Function	✓ (*2)		✓ (*3)		✓	✓	✓			✓		✓	MR-J3-☐T	3-Phase AC 200V	0.05 ~22kW	✓	✓	✓	✓	✓	✓	✓
														MR-J3-☐T1	1-Phase AC 100V	0.05 ~0.4kW	✓	✓					
														MR-J3-☐T4	3-Phase AC 400V	0.5 ~22kW			✓				✓

Notes:
1. Capacity selection software MSIZE (MRZJW3-MOTSZ111) can be downloaded for free from www.meau.com.
2. Please use the manual pulse generator (MR-HDP01).
3. Please use the extended IO unit (MR-J3-D01).

100V/200V Amplifier Selection:

(Example Part No. = MR-J3-10B-RJ006)

MR-J3-□ □ □ - □

Symbol	Power Supply
None	Standard J3 Amplifier
RJ006	Fully Closed Loop Control (*1)

Notes:
1. Available on MR-J3-B type amplifiers only.

Mitsubishi General Purpose AC Servo Amplifier

A: General Purpose Interface
B: SSCNET III Interface
T: CC-Link Interface

Symbol	Power Supply
None	3-phase 200VAC or 1-phase 230VAC (*1)
1	1-phase 100VAC (*2)

Notes:
1. The 1-phase 200VAC is available on MR-J3-70 or smaller.
2. The 1-phase 100VAC is available on MR-J3-40 or smaller.

Stocked Amplifiers

Model Number
MR-J3-10A1
MR-J3-10B1
MR-J3-10T1
MR-J3-10A
MR-J3-10B
MR-J3-10T
MR-J3-20A1
MR-J3-20B1
MR-J3-20T1
MR-J3-20A
MR-J3-20B
MR-J3-20T
MR-J3-40A1
MR-J3-40B1
MR-J3-40T1
MR-J3-40A
MR-J3-40B
MR-J3-40B-RJ006

Model Number
MR-J3-40T
MR-J3-60A
MR-J3-60B
MR-J3-60B-RJ006
MR-J3-60T
MR-J3-70A
MR-J3-70B
MR-J3-70B-RJ006
MR-J3-70T
MR-J3-100A
MR-J3-100B
MR-J3-100B-RJ006
MR-J3-100T
MR-J3-200A
MR-J3-200B
MR-J3-200B-RJ006
MR-J3-200T
MR-J3-350A

Model Number
MR-J3-350B
MR-J3-350B-RJ006
MR-J3-350T
MR-J3-500A
MR-J3-500B
MR-J3-500T
MR-J3-700A
MR-J3-700B
MR-J3-700T
MR-J3-11KA
MR-J3-11KB
MR-J3-15KA
MR-J3-15KB
MR-J3-22KA
MR-J3-22KB

Symbol	Compatible Motors						
	HF-KP	HF-MP	HF-SP	HC-LP	HC-RP	HC-UP	HA-LP
10	053, 13	053, 13	—	—	—	—	—
20	23	23	—	—	—	—	—
40	43	43	—	—	—	—	—
60	—	—	51, 52	52	—	—	—
70	73	73	—	—	—	72	—
100	—	—	81, 102	102	—	—	—
200	—	—	121, 201, 152, 202	152	103, 153	152	—
350	—	—	301, 352	202	203	202	—
500	—	—	421, 502	302	353, 503	352, 502	502
700	—	—	702	—	—	—	601, 701M, 702
11K	—	—	—	—	—	—	801, 12K1, 11K1M, 11K2
15K	—	—	—	—	—	—	15K1, 15K1M, 15K2
22K	—	—	—	—	—	—	20K1, 25K1, 22K1M, 22K2
DU30K (*1,*2)	—	—	—	—	—	—	30K1, 30K1M, 30K2
DU37K (*1, *2)	—	—	—	—	—	—	37K1, 37K1M, 37K2

Notes:
1. Converter Unit MR-J3-CR55K is required for 30kW and 37kW amplifiers.
2. Available for MR-J3-A and B types only.

400V Amplifier Selection:

(Example Part No. = MR-J3-60A4)

MR-J3-□ □ 4 - □

Symbol	Power Supply
None	Standard J3 Amplifier
RJ006	Fully Closed Loop Control (*1)

Notes:
1. Available on 600kW~22kW MR-J3-B amplifiers only.

400VAC Amplifier

Mitsubishi General Purpose AC Servo Amplifier

A: General Purpose Interface
B: SSCNET III Interface
T: CC-Link Interface (up to 22kW only)

Stocked Amplifiers

Model Number
MR-J3-60A4
MR-J3-60B4
MR-J3-60B4-RJ006
MR-J3-60T4
MR-J3-100A4
MR-J3-100B4
MR-J3-100B4-RJ006
MR-J3-100T4
MR-J3-200A4
MR-J3-200B4
MR-J3-200B4-RJ006
MR-J3-200T4

Model Number
MR-J3-350A4
MR-J3-350B4
MR-J3-350B4-RJ006
MR-J3-350T4
MR-J3-500A4
MR-J3-500B4
MR-J3-500B4-RJ006
MR-J3-500T4
MR-J3-700A4
MR-J3-700B4
MR-J3-700B4-RJ006
MR-J3-700T4

Model Number
MR-J3-11KA4
MR-J3-11KB4
MR-J3-15KA4
MR-J3-15KB4
MR-J3-22KA4
MR-J3-22KB4

Symbol	Compatible Motors	
	HF-SP	HA-LP
60	524	—
100	1024	—
200	1524, 2024	—
350	3524	—
500	5024	—
700	7024	6014, 7014
11K	—	8014, 12K14, 11K1M4, 11K24
15K	—	15K14, 15K1M4, 15K24
22K	—	20K14, 22K1M4, 22K24
DU30K (*1, *2)	—	25K14, 30K14, 30K1M4, 30K24
DU37K (*1, *2)	—	37K14, 37K1M4, 37K24
DU45K (*1, *2)	—	45K1M4, 45K24
DU55K (*1, *2)	—	50K1M4, 55K24

Notes:
1. Converter Unit MR-J3-CR55K4 is required for 30kW to 55kW amplifiers.
2. Available for the MR-J3-A and B types only.

MR-J3-A Servo Amplifier Specifications 100/200V 22kW or Smaller

Servo Amplifier Model MR-J3-		10A	20A	40A	60A	70A	100A	200A	350A	500A	700A	11KA	15KA	22KA	10A1	20A1	40A1
Main Circuit Power Supply	Voltage/Frequency (*1, *2)	3-phase 200 to 230VAC 50/60Hz or 1-phase 200 to 230VAC 50/60Hz (*10)					3-phase 200 to 230VAC 50/60Hz								1-phase 100 to 120VAC 50/60Hz		
	Permissible Voltage Fluctuation	For 3-phase 200 to 230VAC: 3-phase170 to 253VAC For 1-phase 200 to 230VAC: 1-phase170 to 253VAC					3-phase 200 to 230VAC 50/60Hz								1-phase 85 to 132VAC		
	Permissible Frequency Fluctuation	±5% maximum															
Control Circuit Power Supply	Voltage Frequency	1-phase 200 to 230VAC 50/60Hz (*10)					1-phase 200 to 230VAC 50/60Hz								1-phase 100 to 120VAC 50/60Hz		
	Permissible Voltage Fluctuation	1-phase 170 to 253VAC													1-phase 85 to 132VAC		
	Permissible Frequency Fluctuation	±5% maximum															
	Power Consumption (W)	30								45					30		
Interface Power Supply		24VDC ±10% (required current capacity: 300mA (*7))															
Regenerative Resistor/ Tolerable Regenerative Power (W) (* 3, *4)	Built In Regenerative Resistor	—	10	10	10	20	20	100	100	130	170	—	—	—	—	10	10
	External Regenerative Resistor (Standard Accessory) (*5, 6)	—	—	—	—	—	—	—	—	—	—	500 (800)	850 (1300)	850 (1300)	—	—	—
Control System		Sine-wave PWM control/current control system															
Dynamic Brake		Built-in (*8)										External option			Built-in (*8)		
Safety Features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection															
Position Control Mode	Maximum Input Pulse Frequency	1Mpps (when using differential receiver), 200kpps (when using open collector), (4Mpps (*11))															
	Positioning Feedback Pulse	Resolution per encoder/servo motor rotation: 262144 p/rev															
	Command Pulse Multiple	Electronic gear A/B multiple, A: 1 to 1048576, B: 1 to 1048576, 1/10 < A/B < 2000															
	Positioning Complete Width Setting	0 to ±10000 pulses (command pulse unit)															
	Excess Error	±3 rotations															
	Torque Limit	Set by parameters or external analog input (0 to +10VDC/maximum torque)															
Speed Control Mode	Speed Control Range	Analog speed command 1:2000, internal speed command 1:5000															
	Analog Speed Command Input	0 to ±10VDC/rated speed (possible to change the speed in 10V using the parameter No. PC12.) (*12)															
	Speed Fluctuation Rate	±0.01% maximum (load fluctuation 0 to 100%) 0% (power fluctuation ±10%) ±0.2% maximum (ambient temperature 25°C±10°C (77°F±50°F)), when using analog speed command															
	Torque Limit	Set by parameters or external analog input (0 to +10VDC/maximum torque) (*12)															
Torque Control Mode	Analog Torque Command Input	0 to ±8VDC/maximum torque (input impedance 10 to 12kΩ) (*12)															
	Speed Limit	Set by parameters or external analog input (0 to ±10VDC/rated speed)															
Structure		Self-cooling open (IP00)					Fan cooling open (IP00)								Self-cooling open (IP00)		
Environment	Ambient Temperature (*9)	0 to 55°C (32 to 131°F) (non-freezing), storage: –20 to 65°C (-4 to 149°F) (non-freezing)															
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)															
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust															
	Elevation	1000m or less above sea level															
	Vibration	5.9m/s² maximum															
Mass kg (lb)		0.8 (1.8)	0.8 (1.8)	1.0 (2.2)	1.0 (2.2)	1.4 (3.1)	1.4 (3.1)	2.3 (5.1)	2.3 (5.1)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)	0.8 (1.8)	0.8 (1.8)	1.0 (2.2)

Notes:

1. Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
4. Refer to the section "Options • Optional regeneration unit" in the MR-J3 manual for the tolerable regenerative power (W).
5. The servo amplifier (MR-J3-□KA-PX) without an enclosed regenerative resistor is also available.
6. The value applies when the external regenerative resistors, GRZG400-□Ω, (standard accessory) are used with cooling fans (2 units of 92 x 92mm, minimum air flow: 1.0m³/min). Note that change in the parameter No. PA02 is required.
7. 300mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□A SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
8. Special specification models without a dynamic brake, MR-J3-□A-ED and MR-J3-□A1-ED, are also available.
9. The MR-J3-350A or smaller servo amplifier can be installed closely. In this case, keep the ambient temperature within 0 to 45°C (32 to 113°F), or use the servo amplifier with 75% or less of the effective load rate.
10. The special specification model, MR-J3-□A-U004, is also available for 1-phase 200 to 240 VAC.
11. 4Mpps compatible servo amplifier (MR-J3-□A(1)-KE) is also available.
12. A set of MR-J3-□A(1)-RJ040 and the extension IO unit, MR-J3-D01, is available for high resolution analog speed torque command.

MR-J3-A Servo Amplifier Specifications: 200VAC, 30kW or Larger

Drive Unit Model		MR-J3-DU30KA	MR-J3-DU37KA
Main Circuit Power Supply	Voltage/Frequency (*1)	The drive unit's main circuit power is supplied from the converter unit.	
	Permissible Voltage Fluctuation		
	Permissible Frequency Fluctuation		
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 to 230VAC 50/60Hz	
	Permissible Voltage Fluctuation	1-phase 170 to 253VAC	
	Permissible Frequency Fluctuation	±5% maximum	
	Power Consumption (W)	45	
Interface Power Supply		24VDC ±10% (required current capacity: 300mA (*2))	
Control System		Sine-wave PWM control/current control system	
Dynamic Brake		External option	
Safety Features		Overcurrent shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection	
Position Control Mode	Maximum Input Pulse Frequency	1Mpps (when using differential receiver), 200kpps (when using open collector)	
	Positioning Feedback Pulse	Resolution per encoder/servo motor rotation: 262144 p/rev	
	Command Pulse Multiple	Electronic gear A/B multiple, A: 1 to 1048576, B: 1 to 1048576, 1/10 < A/B < 2000	
	Positioning Complete Width Setting	0 to ±10000 pulses (command pulse unit)	
	Excess Error	±3 rotations	
	Torque Limit	Set by parameters or external analog input (0 to +10VDC/maximum torque)	
Speed Control Mode	Speed Control Range	Analog speed command 1:2000, internal speed command 1:5000	
	Analog Speed Command Input	0 to ±10VDC/rated speed (possible to change the speed in 10V using the parameter No. PC12.)	
	Speed Fluctuation Rate	±0.01% maximum (load fluctuation 0 to 100%) 0% (power fluctuation ±10%) ±0.2% maximum (ambient temperature 25°C±10°C (77°F±50°F)), when using analog speed command	
	Torque Limit	Set by parameters or external analog input (0 to +10VDC/maximum torque)	
Torque Control Mode	Analog Torque Command Input	0 to ±8VDC/maximum torque (input impedance 10 to 12kΩ)	
	Speed Limit	Set by parameters or external analog input (0 to ±10VDC/rated speed)	
Structure		Fan cooling open (IP00)	
Mass kg (lb)		26 (57)	
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (–4 to 149°F) (non-freezing)	
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)	
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or duster	
	Elevation	1000m or less above sea level	
	Vibration	5.9m/s^2 maximum	

Notes:

1. Rated output and rated speed of the servo motor used in combination with the drive unit and the converter unit are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. The interface power supply can be shared with the drive unit and the converter unit. When all of the input/output points are used, 300mA is required for the drive unit, and 130mA is required for the converter unit. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-☐A SERVO AMPLIFIER INSTRUCTION MANUAL" for details.

MR-J3-A Servo Amplifier Specifications, 400VAC, 22kW or Smaller

Servo Amplifier Model MR-J3-		60A4	100A4	200A4	350A4	500A4	700A4	11KA4	15KA4	22KA4
Main Circuit Power Supply	Voltage/Frequency (*1, 2)	3-phase 380 to 480VAC 50/60Hz								
	Permissible Voltage Fluctuation	3-phase 323 to 528 VAC								
	Permissible Frequency Fluctuation	±5% maximum								
Control Circuit Power Supply	Voltage/Frequency	1-phase 380 to 480VAC 50/60Hz								
	Permissible Voltage Fluctuation	1-phase 323 to 528 VAC								
	Permissible Frequency Fluctuation	±5% maximum								
	Power Consumption (W)	30			45					
Interface Power Supply		24VDC ±10% (required current capacity: 300mA (*7))								
Regenerative Resistor/Tolerable Regenerative Power (W) (*3, 4)	Built-In Regenerative Resistor	15	15	100	100	130 (*9)	170 (*9)	—	—	—
	External Regenerative Resistor (Standard Accessory) (*5, 6)	—	—	—	—	—	—	500 (800)	850 (1300)	850 (1300)
Control System		Sine-wave PWM control/current control system								
Dynamic Brake		Built-in (*8, 10)						External option		
Safety Features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection								
Position Control Mode	Maximum Input Pulse Frequency	1Mpps (when using differential receiver), 200kpps (when using open collector)								
	Positioning Feedback Pulse	Resolution per encoder/servo motor rotation: 262144 p/rev								
	Command Pulse Multiple	Electronic gear A/B multiple, A: 1 to 1048576, B: 1 to 1048576, 1/10 < A/B < 2000								
	Positioning Complete Width Setting	0 to ±10000 pulses (command pulse unit)								
	Excess Error	±3 rotations								
	Torque Limit	Set by parameters or external analog input (0 to +10 VDC/maximum torque)								
Speed Control Mode	Speed Control Range	Analog speed command 1:2000, internal speed command 1:5000								
	Analog Speed Command Input	0 to ±10VDC/rated speed (possible to change the speed in 10V using the parameter No. PC12.) (*11)								
	Speed Fluctuation Rate	±0.01% maximum (load fluctuation 0 to 100%); 0% (power fluctuation ±10%) ±0.2% maximum (ambient temperature 25°C±10°C (77°F±50°F)), when using analog speed command								
	Torque Limit	Set by parameters or external analog input (0 to +10VDC/maximum torque) (*11)								
Torque Control Mode	Analog Torque Command Input	0 to ±8VDC/maximum torque (input impedance 10 to 12kΩ) (*11)								
	Speed Limit	Set by parameters or external analog input (0 to ±10VDC/rated speed)								
Structure		Self-cooling open (IP00)		Fan cooling open (IP00)						
Environment	Ambient Temperature (*6)	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)								
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)								
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust								
	Elevation	1000m or less above sea level								
	Vibration	5.9m/s² maximum								
Mass kg (lb)		1.7 (3.7)	1.7 (3.7)	2.1 (4.6)	4.6 (10)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)

Notes:

1. Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
4. Refer to the section "Options • Optional regeneration unit" in the MR-J3 manual for the tolerable regenerative power (W).
5. The servo amplifier (MR-J3-□KA4-PX) without an enclosed regenerative resistor is also available.
6. The value applies when the external regenerative resistors, GRZG400-□Ω, (standard accessory) are used with cooling fans (2 units of 92 x 92mm, minimum air flow: 1.0m³/min). Note that change in the parameter No. PA02 is required.
7. 300mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□A SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
8. Special specification models without a dynamic brake, MR-J3-□A4-ED, are also available.
9. The amplifier built-in resistor is compatible with the maximum torque deceleration when the motor is used within the rated speed and the recommended load/motor inertia moment ratio. Contact Mitsubishi if the operating motor speed and the load/motor inertia moment ratio exceed the rated speed and the recommended ratio.
10. For the servo amplifier 5kW or 7kW, the load/motor of inertia moment ratio must be 5 times or less when the amplifier built-in dynamic brake is used, and the motor speed exceeds 2000r/min.
11. For the servo amplifier 11kW to 22kW, a set of MR-J3-□A4-RJ040 and the extension IO unit, MR-J3-D01, is available for high resolution analog speed torque command. Servo amplifier 7kW or smaller, compatible with high resolution analog speed torque command, will be available.

MR-J3-A Servo Amplifier Specifications, 400VAC, 30kW or Larger

Drive Unit Model		MR-J3-DU30KA4	MR-J3-DU37KA4	MR-J3-DU45KA4	MR-J3-55KA4
Main Circuit Power Supply	Voltage/Frequency (*1)	The drive unit's main circuit power is supplied from the converter unit.			
	Permissible Voltage Fluctuation				
	Permissible Frequency Fluctuation				
Control Circuit Power Supply	Voltage/Frequency	1-phase 380 to 480VAC 50/60Hz			
	Permissible Voltage Fluctuation	1-phase 323 to 528VAC			
	Permissible Frequency Fluctuation	±5% maximum			
	Power Consumption (W)	45			
Interface Power Supply		24VDC ±10% (required current capacity: 300mA (*2))			
Control System		Sine-wave PWM control/current control system			
Dynamic Brake		External option			
Safety Features		Overcurrent shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection			
Position Control Mode	Maximum Input Pulse Frequency	1Mpps (when using differential receiver), 200kpps (when using open collector)			
	Positioning Feedback Pulse	Resolution per encoder/servo motor rotation: 262144 p/rev			
	Command Pulse Multiple	Electronic gear A/B multiple, A: 1 to 1048576, B: 1 to 1048576 1/10 < A/B < 2000			
	Positioning Complete Width Setting	0 to ±10000 pulses (command pulse unit)			
	Excess Error	±3 rotations			
	Torque Limit	Set by parameters or external analog input (0 to +10VDC/maximum torque)			
Speed Control Mode	Speed Control Range	Analog speed command 1:2000, internal speed command 1:5000			
	Analog Speed Command Input	0 to ±10VDC/rated speed (possible to change the speed in 10V using the parameter No. PC12.)			
	Speed Fluctuation Rate	±0.01% maximum (load fluctuation 0 to 100%) 0% (power fluctuation ±10%) ±0.2% maximum (ambient temperature 25°C±10°C (77°F±50°F)), when using analog speed command			
	Torque Limit	Set by parameters or external analog input (0 to +10VDC/maximum torque)			
Torque Control Mode	Analog Torque Command Input	0 to ±8VDC/maximum torque (input impedance 10 to 12kΩ)			
	Speed Limit	Set by parameters or external analog input (0 to ±10VDC/rated speed)			
Structure		Fan cooling open (IP00)			
Mass kg (lb)		18 (40)		26 (57)	
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)			
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)			
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust			
	Elevation	1000m or less above sea level			
	Vibration	5.9m/s^2 maximum			

Notes:

1. Rated output and rated speed of the servo motor used in combination with the drive unit and the converter unit are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. The interface power supply can be shared with the drive unit and the converter unit. When all of the input/output points are used, 300mA is required for the drive unit, and 130mA is required for the converter unit. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□A SERVO AMPLIFIER INSTRUCTION MANUAL" for details.

MR-J3-B Servo Amplifier Specifications 100V/200VAC, 22kW or Smaller

Servo Amplifier Model MR-J3-		10B	20B	40B	60B	70B	100B	200B	350B	500B	700B	11KB	15KB	22KB	10B1	20B1	40B1
Main Circuit Power Supply	Voltage/Frequency (*1, *2)	3-phase 200 to 230VAC 50/60Hz or 1-phase 200 to 230VAC 50/60Hz (*10)					3-phase 200 to 230VAC 50/60Hz								1-phase 100 to 120VAC 50/60Hz		
	Permissible Voltage Fluctuation	For 3-phase 200 to 230VAC: 3-phase 170 to 253VAC For 1-phase 200 to 230VAC: 1-phase 170 to 253VAC					3-phase 170 to 253VAC								1-phase 85 to 132VAC		
	Permissible Frequency Fluctuation	±5% maximum															
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 to 230VAC 50/60Hz (*10)					1-phase 200 to 230VAC 50/60Hz								1-phase 100 to 120VAC 50/60Hz		
	Permissible Voltage Fluctuation	1-phase 170 to 253VAC													1-phase 85 to 132VAC		
	Permissible Frequency Fluctuation	±5% maximum															
	Power Consumption (W)	30								45					30		
Interface Power Supply		24VDC ±10% (required current capacity: 150mA (*7))															
Regenerative Resistor/ Tolerable Regenerative Power (W) (*3, *4)	Built-In Regenerative Resistor		10	10	10	20	20	100	100	130	170	—	—	—	—	10	10
	External Regenerative Resistor (Standard Accessory) (*5, *6)	—	—	—	—	—	—	—	—	—	—	500 (800)	850 (1300)	850 (1300)	—	—	—
Control System		Sine-wave PWM control/current control system															
Dynamic Brake		Built-in (*8)										External option			Built-in (*8)		
Safety Features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection															
Structure		Self-cooling open (IP00)				Fan cooling open (IP00)									Self-cooling open (IP00)		
Environment	Ambient Temperature (*9)	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)															
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)															
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust															
	Elevation	1000m or less above sea level															
	Vibration	5.9m/s² maximum															
Mass kg (lb)		0.8 (1.8)	0.8 (1.8)	1.0 (2.2)	1.0 (2.2)	1.4 (3.1)	1.4 (3.1)	2.3 (5.1)	2.3 (5.1)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)	0.8 (1.8)	0.8 (1.8)	1.0 (2.2)

Notes:
1. Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
4. Refer to the section "Options • Optional regeneration unit" in the MR-J3 manual for the tolerable regenerative power (W).
5. The servo amplifier (MR-J3-□KB-PX) without an enclosed regenerative resistor is also available.
6. The value applies when the external regenerative resistors, GRZG400-□Ω, (standard accessory) are used with cooling fans (2 units of 92 x 92mm, minimum air flow: 1.0m³/min). Note that change in the parameter No. PA02 is required.
7. 150mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□B SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
8. Special specification models without a dynamic brake, MR-J3-□B-ED and MR-J3-□B1-ED, are also available.
9. The MR-J3-350B or smaller servo amplifier can be installed closely. In this case, keep the ambient temperature within 0 to 45°C (32 to 113°F), or use the servo amplifier with 75% or less of the effective load rate.
10. The special specification model, MR-J3-□B-U004, is also available for 1-phase 200 to 240VAC.

MR-J3-B Servo Amplifier Specifications: 200VAC, 30kW or Larger

Drive Unit Model		MR-J3-DU30KB	MR-J3-DU37KB
Main Circuit Power Supply	Voltage/Frequency (*1)	The drive unit's main circuit power is supplied from the converter unit	
	Permissible Voltage Fluctuation		
	Permissible Frequency Fluctuation		
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 to 230VAC 50/60Hz	
	Permissible Voltage Fluctuation	1-phase 170 to 253VAC	
	Permissible Frequency Fluctuation	±5% maximum	
	Power Consumption (W)	45	
Interface Power Supply		24VDC ±10% (required current capacity: 150mA (*2))	
Control System		Sine-wave PWM control/current control system	
Dynamic Brake		External option	
Safety Features		Overcurrent shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection	
Structure		Fan cooling open (IP00)	
Mass kg (lb)		26 (57)	
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)	
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)	
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust	
	Elevation	1000m or less above sea level	
	Vibration	5.9m/s² maximum	

Notes:
1. Rated output and rated speed of the servo motor used in combination with the drive unit and the converter unit are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. The interface power supply can be shared with the drive unit and the converter unit. When all of the input/output points are used, 150mA is required for the drive unit, and 130mA is required for the converter unit. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□B SERVO AMPLIFIER INSTRUCTION MANUAL" for details.

MR-J3-B Servo Amplifier Specifications: 400VAC, 22kW or Smaller

Servo Amplifier Model MR-J3-		60B4	100B4	200B4	350B4	500B4	700B4	11KB4	15KB4	22KB4
Main Circuit Power Supply	Voltage/Frequency (*1, *2)	3-phase 380 to 480VAC 50/60Hz								
	Permissible Voltage Fluctuation	3-phase 323 to 528VAC								
	Permissible Frequency Fluctuation	±5% maximum								
Control Circuit Power Supply	Voltage/Frequency	1-phase 380 to 480VAC 50/60Hz								
	Permissible Voltage Fluctuation	1-phase 323 to 528VAC								
	Permissible Frequency Fluctuation	±5% maximum								
	Power Consumption (W)	30			45					
Interface Power Supply		24VDC ±10% (required current capacity: 150mA (*7))								
Regenerative Resistor/ Tolerable Regenerative Power (W) (*3, *4)	Built-In Regenerative Resistor	15	15	100	100	130 (*9)	170 (*9)	—	—	—
	External Regenerative Resistor (Standard Accessory) (*5, *6)	—	—	—	—	—	—	500 (800)	850 (1300)	850 (1300)
Control System		Sine-wave PWM control/current control system								
Dynamic Brake		Built-in (*8, 10)						External option		
Safety Features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection								
Structure		Self-cooling open (IP00)		Fan cooling open (IP00)						
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: –20 to 65°C (-4 to 149°F) (non-freezing)								
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)								
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust								
	Elevation	1000m or less above sea level								
	Vibration	5.9m/s^2 maximum								
Mass kg (lb)		1.7 (3.7)	1.7 (3.7)	2.1 (4.6)	4.6 (10)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)

Notes:

1. Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
4. Refer to the section "Options • Optional regeneration unit" in the MR-J3 manual for the tolerable regenerative power (W).
5. The servo amplifier (MR-J3-☐KB4-PX) without an enclosed regenerative resistor is also available.
6. The value applies when the external regenerative resistors, GRZG400-MΩ, (standard accessory) are used with cooling fans (2 units of 92 X 92mm, minimum air flow: 1.0m^3/min). Note that change in the parameter No. PA02 is required.
7. 150mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-MB SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
8. Special specification models without a dynamic brake, MR-J3-☐B4-ED, are also available.
9. The amplifier built-in resistor is compatible with the maximum torque deceleration when the motor is used within the rated speed and the recommended load/motor inertia moment ratio. Contact Mitsubishi if the operating motor speed and the load/motor inertia moment ratio exceed the rated speed and the recommended ratio.
10. For the servo amplifier 5kW or 7kW, the load/motor of inertia moment ratio must be 5 times or less when the amplifier built-in dynamic brake is used, and the motor speed exceeds 2000r/min.

MR-J3-B Servo Amplifier Specifications: 400VAC, 30kW or Larger

Drive Unit Model		MR-J3-DU30KB4	MR-J3-DU37KB4	MR-J3-DU45KB4	MR-J3-55KB4
Main Circuit Power Supply	Voltage/Frequency (*1)	The drive unit's main circuit power is supplied from the converter unit.			
	Permissible Voltage Fluctuation				
	Permissible Frequency Fluctuation				
Control Circuit Power Supply	Voltage/Frequency	1-phase 380 to 480VAC 50/60Hz			
	Permissible Voltage Fluctuation	1-phase 323 to 528VAC			
	Permissible Frequency Fluctuation	±5% maximum			
	Power Consumption (W)	45			
Interface Power Supply		24VDC ±10% (required current capacity: 150mA (*2))			
Control System		Sine-wave PWM control/current control system			
Dynamic Brake		External option			
Safety Features		Overcurrent shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection			
Structure		Fan cooling open (IP00)			
Mass kg (lb)		18 (40)		26 (57)	
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)			
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)			
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust			
	Elevation	1000m or less above sea level			
	Vibration	5.9m/s^2 maximum			

Notes:

1. Rated output and rated speed of the servo motor used in combination with the drive unit and the converter unit are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. The interface power supply can be shared with the drive unit and the converter unit. When all of the input/output points are used, 150mA is required for the drive unit, and 130mA is required for the converter unit. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□B SERVO AMPLIFIER INSTRUCTION MANUAL" for details.

MR-J3-B-RJ006 Servo Amplifier Specifications: 100VAC/200VAC

Servo Amplifier Model MR-J3-M-RJ006			10B	20B	40B	60B	70B	100B	200B	350B	500B	700B	11KB	15KB	22KB	10B1	20B1	40B1
Main Circuit Power Supply	Voltage/Frequency (*1, *2)		3-phase 200 to 230VAC 50/60Hz or 1-phase 200 to 230VAC 50/60Hz (*10)					3-phase 200 to 230VAC 50/60Hz								1-phase 100 to 120VAC 50/60Hz		
	Permissible Voltage Fluctuation		For 3-phase 200 to 230VAC: 3-phase 170 to 253VAC For 1-phase 200 to 230VAC: 1-phase 170 to 253VAC					3-phase 170 to 253VAC								1-phase 85 to 132VAC		
	Permissible Freq. Fluctuation		±5% maximum															
Control Circuit Power Supply	Voltage/Frequency		1-phase 200 to 230VAC 50/60H (*10)					1-phase 200 to 230VAC 50/60Hz								1-phase 100 to 120VAC 50/60Hz		
	Permissible Voltage Fluctuation		1-phase 170 to 253VAC													1-phase 85 to 132VAC		
	Permissible Freq. Fluctuation		±5% maximum															
	Power Consumption (W)		30								45					30		
Interface Power Supply			24VDC ±10% (required current capacity: 150mA (*7)															
Load-Side Encoder Interface	Serial Interface		Mitsubishi high-speed serial communication															
	Pulse Train Interface	Input Signal	ABZ phase differential input signal															
		Min. Phase Difference	200ns															
Regenerative Resistor/ Tolerable Regenerative Power (W) (*3, *4)	Built-In Regenerative Resistor		—	10	10	10	20	20	100	100	130	170	—	—	—	—	10	10
	External Regenerative Resistor (Standard Accessory) (*5, *6)		—	—	—	—	—	—	—	—	—	—	500 (800)	850 (1300)	850 (1300)	—	—	—
Control System			Sine-wave PWM control/current control system															
Dynamic Brake			Built-in (*8)										External option			Built-in (*8)		
Safety Features			Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection															
Structure			Self-cooling open (IP00)					Fan cooling open (IP00)								Self-cooling open (IP00)		
Environment	Ambient Temperature (*9)		0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)															
	Ambient Humidity		90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)															
	Atmosphere		Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust															
	Elevation		1000m or less above sea level															
	Vibration		5.9m/s^2 maximum															
Mass kg (lb)			0.8 (1.8)	0.8 (1.8)	1.0 (2.2)	1.0 (2.2)	1.4 (3.1)	1.4 (3.1)	2.3 (5.1)	2.3 (5.1)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)	0.8 (1.8)	0.8 (1.8)	1.0 (2.2)

Notes:

1. Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed.The torque drops when the power supply voltage is less than specified.
2. For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. Optimal regenerative resistor varies for each system.
4. Refer to the section "Options •Optional regeneration unit" in the MR-J3 manual for the tolerable regenerative power (W).
5. The servo amplifier (MR-J3-□KB-RZ006) without an enclosed regenerative resistor is also available.
6. The value applies when the external regenerative resistors, GRZG400-□Ω, (standard accessory) are used with cooling fans (2 units of 92 x 92mm, minimum air flow: 1.0m^3/min). Note that change in the parameter No. PA02 is required.
7. 150mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□B-RJ006 SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
8. Special specification models without a dynamic brake, MR-J3-□B-RU006 and MR-J3-□B1-RU006, are also available.
9. The MR-J3-350B or smaller servo amplifier can be installed closely. In this case, keep the ambient temperature within 0 to 45°C (32 to 113°F), or use the servo amplifier with 75% or less of the effective load rate.
10. The special specification model, MR-J3-□B-RJ006U004, is also available for 1-phase 200 to 240VAC.

MR-J3-B-RJ006 Servo Amplifier Specifications: 400VAC

Servo Amplifier Model MR-J3-M-RJ00			60B4	100B4	200B4	350B4	500B4	700B4	11KB4	15KB4	22KB4
Main Circuit Power Supply	Voltage/Frequency (*1, *2)		3-phase 380 to 480VAC 50/60Hz								
	Permissible Voltage Fluctuation		3-phase 323 to 528VAC								
	Permissible Freq. Fluctuation		±5% maximum								
Control Circuit Power Supply	Voltage/Frequency		1-phase 380 to 480VAC 50/60Hz								
	Permissible Voltage Fluctuation		1-phase 323 to 528VAC								
	Permissible Freq. Fluctuation		±5% maximum								
	Power Consumption (W)		30			45					
Interface Power Supply			24VDC ±10% (required current capacity: 150mA (*7))								
Load-Side Encoder Interface	Serial Interface		Mitsubishi high-speed serial communication								
	Pulse Train Interface	Input Signal	ABZ phase differential input signal								
		Minimum Phase Difference	200ns								
Regenerative Resistor/ Tolerable Regenerative Power (W) (*3, *4)	Built-In Regenerative Resistor		15	15	100	100	130 (*9)	170 (*9)	—	—	—
	External Regenerative Resistor (Standard Accessory) (*5, *6)		—	—	—	—	—	—	500 (800)	850 (1300)	850 (1300)
Control System			Sine-wave PWM control/current control system								
Dynamic Brake			Built-in (*8, *10)						External option		
Safety Features			Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection								
Structure			Self-cooling open (IP00)		Fan cooling open (IP00)						
Environment	Ambient Temperature		0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)								
	Ambient Humidity		90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)								
	Atmosphere		Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust								
	Elevation		1000m or less above sea level								
	Vibration		5.9m/s^2 maximum								
Mass kg (lb)			1.7 (3.7)	1.7 (3.7)	2.1 (4.6)	4.6 (10)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)

Notes:

1. Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed.The torque drops when the power supply voltage is less than specified.
2. For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. Optimal regenerative resistor varies for each system.
4. Refer to the section "Options • Optional regeneration unit" in the MR-J3 manual for the tolerable regenerative power (W).
5. The servo amplifier (MR-J3-MKB4-RZ006) without an enclosed regenerative resistor is also available.
6. The value applies when the external regenerative resistors, GRZG400-MΩ, (standard accessory) are used with cooling fans (2 units of 92 x 92mm, minimum air flow: 1.0m^3/min). Note that change in the parameter No. PA02 is required.
7. 150mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□B-RJ006 SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
8. Special specification models without a dynamic brake, MR-J3-□B4-RU006, are also available.
9. The amplifier built-in resistor is compatible with the maximum torque deceleration when the motor is used within the rated speed and the recommended load/motor inertia moment ratio. Contact Mitsubishi if the operating motor speed and the load/motor inertia moment ratio exceed the rated speed and the recommended ratio.
10. For the servo amplifier 5kW or 7kW, the load/motor of inertia moment ratio must be 5 times or less when the amplifier built-in dynamic brake is used, and the motor speed exceeds 2000r/min.

MR-J3-T Servo Amplifier Specifications 100VAC/200VAC

Servo Amplifier Model MR-J3-		10T	20T	40T	60T	70T	100T	200T	350T	500T	700T	11KT	15KT	22KT	10T1	20T1	40T1
Main Circuit Power Supply	Voltage/Frequency (*1, *2)	3-phase 200 to 230VAC 50/60Hz or 1-phase 200 to 230VAC 50/60Hz (*10)					3-phase 200 to 230VAC 50/60Hz								1-phase 100 to 120VAC 50/60Hz		
	Permissible Voltage Fluctuation	For 3-phase 200 to 230VAC: 3-phase 170 to 253VAC For 1-phase 200 to 230VAC: 1-phase 170 to 253VAC					3-phase 170 to 253VAC								1-phase 85 to 132VAC		
	Permissible Freq. Fluctuation	±5% maximum															
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 to 230VAC 50/60Hz (*10)					1-phase 200 to 230VAC 50/60Hz								1-phase 100 to 120VAC 50/60Hz		
	Permissible Voltage Fluctuation	1-phase 170 to 253VAC													1-phase 85 to 132VAC		
	Permissible Freq. Fluctuation	±5% maximum															
	Power Consumption (W)	30								45					30		
Interface Power Supply		24VDC ±10% (required current capacity: 150mA (*7))															
Regenerative Resistor/ Tolerable Regenerative Power (W) (*3, *4)	Built-In Regenerative Resistor	—	10	10	10	20	20	100	100	130	170	—	—	—	—	10	10
	External Regenerative Resistor (Standard Accessory) (*5, *6)	—	—	—	—	—	—	—	—	—	—	500 (800)	850 (1300)	850 (1300)	—	—	—
Control System		Sine-wave PWM control/current control system															
Dynamic Brake		Built-in (*8)										External option			Built-in (*8)		
Safety Features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection															
Structure		Self-cooling open (IP00)				Fan cooling open (IP00)									Self-cooling open (IP00)		
Environment	Ambient Temperature (*9)	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)															
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)															
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust															
	Elevation	1000m or less above sea level															
	Vibration	5.9m/s² maximum															
Mass kg (lb)		0.8 (1.8)	0.8 (1.8)	1.0 (2.2)	1.0 (2.2)	1.4 (3.1)	1.4 (3.1)	2.3 (5.1)	2.3 (5.1)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)	0.8 (1.8)	0.8 (1.8)	10 (2.2)

Notes:
1. Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
4. Refer to the section "Options • Optional regeneration unit" in the MR-J3 manual for the tolerable regenerative power (W).
5. The servo amplifier (MR-J3-□KT-PX) without an enclosed regenerative resistor is also available.
6. The value applies when the external regenerative resistors, GRZG400-□Ω, (standard accessory) are used with cooling fans (2 units of 92 x 92mm, minimum air flow: 1.0m³/min). Note that change in the parameter No. PA02 is required.
7. 150mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□T SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
8. Special specification models without a dynamic brake, MR-J3-□T-ED and MR-J3-□T1-ED, are also available.
9. The MR-J3-350T or smaller servo amplifier can be installed closely. In this case, keep the ambient temperature within 0 to 45°C (32 to 113°F), or use the servo amplifier with 75% or less of the effective load rate.
10. The special specification model, MR-J3-□T-U004, is also available for 1-phase 200 to 240VAC.

MR-J3-T Servo Amplifier Specifications 400VAC

Servo Amplifier Model MR-J3-		60T4	100T4	200T4	350T4	500T4	700T4	11KT4	15KT4	22KT4
Main Circuit Power Supply	Voltage/Frequency (*1, 2)	3-phase 380 to 480VAC 50/60Hz								
	Permissible Voltage Fluctuation	3-phase 323 to 528VAC								
	Permissible Frequency Fluctuation	±5% maximum								
Control Circuit Power Supply	Voltage/Frequency	1-phase 380 to 480VAC 50/60Hz								
	Permissible Voltage Fluctuation	1-phase 323 to 528VAC								
	Permissible Frequency Fluctuation	±5% maximum								
	Power Consumption (W)	30			45					
Interface Power Supply		24VDC ±10% (required current capacity: 150mA (*7))								
Regenerative Resistor/ Tolerable Regenerative Power (W) (*3, 4)	Built-in Regenerative Resistor	15	15	100	100	130 (*9)	170 (*9)	—	—	—
	External Regenerative Resistor (Standard Accessory) (*5, *6)	—	—	—	—	—	—	500 (850)	850 (1300)	850 (1300)
Control System		Sine-wave PWM control/current control system								
Dynamic Brake		Built-in (*8, *10)						External option		
Safety Features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection								
Structure		Self-cooling open (IP00)		Fan cooling open (IP00)						
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)								
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)								
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust								
	Elevation	1000m or less above sea level								
	Vibration	5.9m/s² maximum								
Mass kg (lb)		17 (3.7)	17 (3.7)	21 (4.6)	4.6 (10)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)

Notes:
1 .Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed.The torque drops when the power supply voltage is less than specified.
2. .For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
4. Refer to the section "Options • Optional regeneration unit" in the MR-J3 manual for the tolerable regenerative power (W).
5. The servo amplifier (MR-J3-□KT4-PX) without an enclosed regenerative resistor is also available.
6. The value applies when the external regenerative resistors, GRZG400-MΩ, (standard accessory) are used with cooling fans (2 units of 92 x 92mm, minimum air flow: 1.0m³/min). Note that change in the parameter No. PA02 is required.
7. 150mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□T SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
8. Special specification models without a dynamic brake, MR-J3-□T4-ED are also available.
9. The amplifier built-in resistor is compatible with the maximum torque deceleration when the motor is used within the rated speed and the recommended load/motor inertia moment ratio. Contact Mitsubishi if the operating motor speed and the load/motor inertia moment ratio exceed the rated speed and the recommended ratio.
10. For the servo amplifier 5kW or 7kW, the load/motor of inertia moment ratio must be 5 times or less when the amplifier built-in dynamic brake is used, and the motor speed exceeds 2000r/min.

MR-J3-T Servo Amplifier Common Specifications

Item					Description
Command Interface					CC-Link communication (Ver.1.10), DIO command (extension IO unit MR-J3-D01 is required), or RS-422 communication
Operation System	Point Table	Command Method	Remote Register		Possible with CC-Link communication when 2 stations occupied. Position command input: position command data is set with the remote register. Feed length input setting range: ±1μm to ±999.999mm. Speed command input: speed command data (rotating speed) is set with the remote register.
			Point Table No. Input		Possible with CC-Link communication, DIO command or RS-422 communication CC-Link communication (when 1 station occupied): 31 points CC-Link communication (when 2 stations occupied): 255 points DIO command: 255 points (extension IO unit MR-J3-D01 is required.) RS-422 communication: 255 points Position command input: selects from the point table. 1-point feed length setting range: ±1μm to ±999.999mm. Speed command input: selects speed and acceleration/deceleration time constant from the point table.
		Automatic Operation Mode	Point Table		Point table No. input or point table data input system. Each positioning operation based on position and speed data. Speed changing operation (2 to 255 speeds). Automatic continuous positioning operation (2 to 255 points) Roll feed display is selectable. Clearing droop pulses with the clear (CR) signal is settable.
		Manual Operation Mode	JOG Operation		Inches upon contact input, CC-Link communication or RS-422 communication based on speed data set by a parameter.
			Manual Pulse Generator		Manual feed with the manual pulse generator. Command pulse multiplication: x1, x10, x100 is selectable with parameter.
	Index System	Command Method	Station Position Command Input		Possible with CC-Link communication, DIO command or RS-422 communication CC-Link communication (when 1 station occupied): 31 stations CC-Link communication (when 2 stations occupied): 255 stations DIO command: 255 stations (extension IO unit MR-J3-D01 is required.) RS-422 communication: 255 stations
			Speed Command Input	Remote Register	Possible with CC-Link communication when 2 stations occupied. Sets speed command data (rotating speed) with the remote register.
				Speed No Input	Selects speed and acceleration/deceleration time constant from the point table.
		Automatic Operation Mode	Rotating Direction Specified		Positions to the specified station. Rotating direction is settable.
			Shortest Rotating Direction		Positions to the specified station. Shorter rotating direction from the current point is selected.
		Manual Operation Mode	Index JOG Operation		Rotates in a direction specified by rotating direction evaluation when the start signal (ST1) turns ON. Positions to a nearest station where deceleration to a stop is possible when the start signal (ST1) turns OFF.
			JOG Operation		Inches upon contact input, CC-Link communication or RS-422 communication based on speed data set by a parameter.
Home Position Return Mode	Dog System				Returns to home position upon Z-phase pulse count after passing through near-point dog. Direction for return to home position selectable. Home position shift amount and home position address settable. Automatic retreat on dog back to home position and automatic stroke retreat function.
	Count System				Returns to home position upon encoder pulse count after touching near-point dog. Direction for return to home position selectable. Home position shift amount and home position address settable. Automatic retreat on dog back to home position and automatic stroke retreat function.
	Data Set System				Returns to home position without dog. Sets any position as home position using manual operation, etc. Home position address settable.
	Stopper System				Returns to home position upon hitting end of stroke. Direction for return to home position selectable. Home position address settable.
	Ignore Home (Servo-On Position As Home Position)				Uses position where the servo on signal (SON) turns ON as home position. Home position address settable.
	Dog System Rear End Reference				Returns to home position with respect to the rear end of a near-point dog. Direction for return to home position selectable. Home position shift amount and home position address settable. Automatic retreat on dog back to home position and automatic stroke retreat function.
	Count System Front End Reference				Returns to home position with respect to the front end of a near-point dog. Direction for return to home position selectable. Home position shift amount and home position address settable. Automatic retreat on dog back to home position and automatic stroke retreat function.
	Dog Cradle System				Returns to home position upon the first Z-phase pulse with respect to the front end of a near-point dog. Direction for return to home position selectable. Home position shift amount and home position address settable. Automatic retreat on dog back to home position and automatic stroke retreat function.
	Dog System Adjacent Z-Phase Reference				Returns to home position upon the Z-phase pulse right before a near-point dog with respect to the front end of a near-point dog. Direction for return to home position selectable. Home position shift amount and home position address settable. Automatic retreat on dog back to home position and automatic stroke retreat function.
	Dog System Front End Reference				Returns to home position to the front end of a point dog with respect to the front end of a near-point dog. Direction for return to home position selectable. Home position shift amount and home position address settable. Automatic retreat on dog back to home position and automatic stroke retreat function.
	Dog Less Z-Phase Reference				Returns to home position to the first Z-phase pulse with respect to the first Z-phase pulse. Direction for return to home position selectable. Home position shift amount and home position address settable.
	Dog System Torque Limit				Returns to home position upon Z-phase pulse count after passing through near-point dog. Direction for return to home position selectable. Home position shift amount and home position address settable. Automatic retreat on dog back to home position and automatic stroke retreat function. Torque limit settable.
	Data Set System Torque Limit				Returns to home position without dog. Sets any position as home position by manual movement. Home position address and torque limit settable.
	Automatic Positioning To Home Position Function				High-speed automatic positioning to a defined home position.

MR-J3-D01 Specifications

Model		MR-J3-D01
Power Supply for Interface		24VDC ±10% (required current capacity: 800mA (*1, *2))
Digital Input		30 points, photocoupler insulation, sink/source compatible
Digital Output		16 points, photocoupler insulation, sink/source compatible
Analog Input		2ch, 0 to ±10VDC (input impedance: 10 to 12kΩ)
Analog Output		2ch, 0 to ±12VDC
Power Supply for Analog Input Signal		P15R: DC+15V, permissible current: 30mA; N12R: DC–12V, permissible current: 30mA (*5)
Structure		Self-cooling open (IP00)
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust
	Elevation	1000m or less above sea level
	Vibration	5.9m/s² maximum
Mass kg (lb)		140 (0.31)

Functions Connecting to MR-J3-□T□

Function	Description
Digital Input	Point table No. selection 1 to 8 (DI0 to DI7), Servo-on (SON), Reset (RES), External torque limit selection (TL), Internal torque limit selection (TL1), Manual pulse generator multiplication 1, 2 (TP0, TP1), Override selection (OVR), Automatic/manual selection (MD0), Temporary stop/restart (TSTP), Proportional control (PC), Forward rotation start (ST1), Reverse rotation start (ST2), Position data input 1 to 12 (POS00 to POS03, POS10 to POS13, POS20 to POS23), Position data input symbol+ (POSP), Clear (CR), Position data input symbol– (POSN), Strobe (STRB), Speed selection 1 to 3 (SP0 to SP2), Gain changing (CDP) (*3)
Digital Output	Alarm code (ACD0 to ACD3), M code (MCD00 to MCD03, MCD10 to MCD13), Temporary stop (PUS), Positioning complete (MEND), Phase match (CPO), In-position (INP), Position data request 1, 2 (PRQ1, PRQ2), Zero speed (ZSP), Torque limit in effect (TLC), Warning (WNG), Electromagnetic brake interlock (MBR), Dynamic brake interlock (DB), Battery warning (BWNG), Positioning range output (POT), Variable gain selection (CDPS), Command speed reached (SA), Point table No. output 1 to 8 (PT0 to PT7) (*3)
Analog Input	Override (VC) (–10 to +10VDC/0 to 200%) Analog torque limit (TLA) (0 to ±10VDC/maximum torque)
Analog Output	Analog monitor output (MO1, MO2) (*4)

Functions Connecting to MR-J3-□A□-RJ040

Function		Description
Position Control Mode	Electric Gear Numerator Digital Input	The electric gear numerator can be set arbitrarily in 5-digit BCD or 16-bit binary.
	High Resolution Analog Torque Limit	The torque limit can be set according to the rotating direction. (TLAP: 0 to +10VDC/maximum torque); (TLAN: 0 to –10VDC/maximum torque)
Speed Control Mode	Digital Speed Command Input	The speed command can be set arbitrarily in 5-digit BCD or 12-bit (16-bit) binary.
	High Resolution Analog Torque Limit	The torque limit can be set according to the rotating direction. (TLAP: 0 to +10VDC/maximum torque); (TLAN: 0 to –10VDC/maximum torque)
Torque Control Mode	Digital Speed Limit Input	The speed limit can be set arbitrarily in 5-digit BCD or 12-bit (16-bit) binary.
	High Resolution Torque Command Input	External analog torque command (OTC) (0 to ±8VDC/maximum torque)

Notes:
1. 800mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-MT MR-J3-D01 SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
2. A 24VDC power supply for input/output signals can be shared by the servo amplifier and MR-J3-D01. In this case, secure the power supply capacity corresponding to the points of the input/output signals to be used.
3. The signal assignment can be changed by setting the parameters. Refer to "MR-J3-MT MR-J3-D01 SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
4. Analog monitor output can be selected by setting the parameter. Refer to "MR-J3-MT MR-J3-D01 SERVO AMPLIFIER INSTRUCTION MANUAL" for details.
5. P15R can be used as a power supply for TLA and VC. N12R can be used as a power supply for VC. Note that the power voltage varies between –12 to –15V.

Ⓑ Converter Unit (Required for 30KW ~ 55KW 200/400V amplifiers)

Converter Unit Model		MR-J3-CR55K (For 200VAC Only)	MR-J3-CR55K4 (For 400VAC Only)
Main Circuit Power Supply	Voltage/Frequency (*1, *2)	3-phase 200 to 230VAC 50/60Hz	3-phase 380 to 480VAC 50/60Hz
	Permissible Voltage Fluctuation	3-phase 170 to 253VAC	3-phase 323 to 528VAC
	Permissible Frequency Fluctuation	±5% maximum	±5% maximum
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 to 230VAC 50/60Hz	1-phase 380 to 480VAC 50/60Hz
	Permissible Voltage Fluctuation	1-phase 170 to 253VAC	1-phase 323 to 528VAC
	Permissible Frequency Fluctuation	±5% maximum	±5% maximum
	Power Consumption (W)	45	45
Interface Power Supply		24VDC ±10% (required current capacity: 130mA (*3))	24VDC ±10% (required current capacity: 130mA (*3))
Safety Features		Regeneration overvoltage shutdown, regeneration fault protection, overload shutdown (electronic thermal), undervoltage/sudden power outage protection	
Structure		Fan cooling open (IP00)	Fan cooling open (IP00)
Mass kg (lb)		25 (55)	25 (55)

Notes:
1. Rated output and rated speed of the servo motor used in combination with the drive unit and the converter unit are as indicated when using the power supply voltage and frequency listed. The torque drops when the power supply voltage is less than specified.
2. For torque characteristics when combined with a servo motor, refer to the section "Servo motor torque characteristics" in the MR-J3 manual.
3. The interface power supply can be shared with the drive unit and the converter unit. When all of the input/output points are used, 150mA is required for the drive unit, and 130mA is required for the converter unit. The current capacity can be stepped down according to the number of input/output points in use. Refer to "MR-J3-□ A/B SERVO AMPLIFIER INSTRUCTION MANUAL" for details.

C MR-J3 Servomotors

MR-J3 Motor Types

Motor Series		Rated Speed (Maximum Speed) r/min	Rated Output (kW)	Electromagnetic Brake Available	Standards		Protective Degree	Features	Application Examples
					EN	UL/cUL			
Small Capacity Series	HF-KP	3000 (6000)	**5 Types (200V)** 0.05, 0.1, 0.2, 0.4, 0.75	✓	✓	✓	IP65 (*2)	**Low inertia** Perfect for general industrial machines	• Belt drive • Robots • Mounters • Sewing machines • X-Y tables • Food processing machines • Semiconductor manufacturing devices • Knitting and embroidery machines
	HF-MP							**Ultra-low inertia** Well suited for high frequency operation.	• Inserters • Mounters
Medium Capacity Series	HF-SP	1000 (1500)	**6 Types (200V)** 0.5, 0.85, 1.2, 2.0, 3.0, 4.2	✓	✓	✓	IP67 (*2)	**Medium inertia** Suitable for variable applications three models from low to high-speed are available.	• Material handling systems • Robots • X-Y tables
		2000 (3000)	**7 Types (200V)** 0.5, 1.0, 1.5, 2.0, 3.5, 5.0, 7.0 **7 Types (400V)** 0.5, 1.0, 1.5, 2.0, 3.5, 5.0, 7.0	✓	✓	✓	IP67 (*2)		
	HC-LP	2000 (3000)	**5 Types (200V)** 0.5, 1.0, 1.5, 2.0, 3.0	✓	✓	✓	IP65 (*2)	**Low inertia** Perfect for general industrial machines.	• Roller feeder • Loader and unloader • High frequency material handling systems
	HC-RP	3000 (4500)	**5 Types (200V)** 1.0, 1.5, 2.0, 3.5, 5.0	✓	✓	✓	IP65 (*2)	**Ultra-low inertia** Well suited for high-frequency	• Ultra-high-frequency material handling systems
Flat, Small/ Medium Capacity Series	HC-UP	2000 (3000: 0.75 ~ 2kW 2500: 3.5, 5kW)	**5 Types (200V)** 0.75, 1.5, 2.0, 3.5, 5.0	✓	✓	✓	IP65 (*2)	**Flat Type** The flat design makes this unit well suited for situations where the installation space is restricted.	• Robots • Food processing machines
Medium/ Large Capacity Series	HA-LP	1000 (1200)	**8 Types (200V)** 6.0, 8.0, 12, 15, 20, 25, 30, 37 **8 Types (400V)** 6.0, 8.0, 12, 15, 20, 25, 30, 37	✓ (6.0 ~12kW Only)	✓	✓	IP44 (*2)	**Low inertia** Suitable for variable applications three models from low to medium-speed are available. As a standard, 30kW and larger capacities are compatible with flange mounting or foot mounting.	• Injection molding machines • Semiconductor manufacturing devices • Large material handling systems
		1500 (2000)	**6 Types (200V)** 7.0, 11, 15, 22, 30, 37 **8 Types (400V)** 7.0, 11, 15, 22, 30, 37, 45, 50	✓ (7.0 ~15kW Only)	✓	✓	IP44 (*2)		
		2000 (2000)	**7 Types (200V)** 5.0, 7.0, 11, 15, 22, 30, 37 **7 Types (400V)** 11, 15, 22, 30, 37, 45, 55	✓ (11 ~22kW Only)	✓	✓	IP44 (HA-LP 502/702=IP65) (*2)		

Notes:
1. ✓ indicates the available product range.
2. The shaft-through portion is excluded.

200V Motor Selection: (Example Part# = HF-SP102BK)

H□-□P-□□□□□□

Symbol	Motor Series	
HF-KP	Low inertia, small capacity	
HF-MP	Ultra-low inertia, small capacity	
HF-SP	Medium inertia, medium capacity	
HC-LP	Low inertia, medium capacity	
HC-RP	Ultra-low inertia, medium capacity	
HC-UP	Flat type Small/medium capacity	
HA-LP	Low inertia Medium/large capacity	

Symbol	Shaft Shape
None	Standard (Straight)
K	With Keyway (*1)
D	D-Cut (*1)

Note:
1. Refer to Motor Shaft Detail in this section for compatible models and specifications.

Symbol	Oil Seal
None	None
J	Oil Seal Installed (*1, *2)

Note:
1. Dimensions for HF-KP/MP motors with oil seals are different than standard models. Contact Mitsubishi for details.
2. Oil-Seal not available for the 0.05kW motors.

Symbol	Electromagnetic Brake
None	None
B	With Brake

Symbol	Rated Speed (r/min)
1	1000 (*1)
1M	1500 (*1)
2	2000 (*1)
3	3000 (*1)

Note:
1. Refer to motor specifications in this catalog for correct symbol to use for each servo motor.

Symbol	Rated Output (kW)
05	0.05
1 to 8	0.1 to 0.85
10 to 80	1.0 to 8.0
11K to 37K	11.0 to 37.0

Stocked Motors

Model Number
HF-KP053
HF-KP053B
HF-KP13
HF-KP13B
HF-KP13D
HF-KP23
HF-KP23K
HF-KP23BK
HF-KP43K
HF-KP43BK
HF-KP73K
HF-KP73BK

Model Number
HF-MP053
HF-MP053B
HF-MP13
HF-MP13B
HF-MP23K
HF-MP23BK
HF-MP43K
HF-MP43BK
HF-MP73K
HF-MP73BK

Model Number
HF-SP51K
HF-SP51BK
HF-SP52K
HF-SP52BK
HF-SP81K
HF-SP81BK
HF-SP102K
HF-SP102BK
HF-SP121K
HF-SP121BK
HF-SP152K
HF-SP152BK
HF-SP202K
HF-SP202BK
HF-SP352K
HF-SP352BK
HF-SP502K
HF-SP502BK
HF-SP702K
HF-SP702BK

Model Number
HC-RP103K
HC-RP103BK
HC-UP152K
HC-UP152BK
HC-RP153K
HC-RP353K
HC-RP353BK
HC-RP503K

Model Number
HC-UP72K
HC-UP72BK
HC-UP202K
HC-UP202BK
HC-UP352K
HC-UP352BK
HC-UP502K
HC-UP502BK

Model Number
HA-LP11K2K
HA-LP11K2BK
HA-LP15K2K
HA-LP15K2BK
HA-LP22K2K
HA-LP22K2BK

400V Motor Selection: (Example Part# = HF-SP524BK)

H□-□P-□□4□□

400 VAC

Symbol	Motor Series	
HF-SP	Medium inertia, medium capacity	
HA-LP	Low inertia, medum/large capacity	

Symbol	Shaft Shape
None	Standard (Straight)
K	With Keyway (*1)

Note:
1. Refer to Motor Shaft Detail in this section for compatible models and specifications.

Symbol	Electromagnetic Brake
None	None
B	With Brake

Symbol	Rated Speed (r/min)
1	1000 (*1)
1M	1500 (*1)
2	2000 (*1)

Note:
1. Refer to motor specifications in this catalog for correct symbol to use for each servo motor.

Symbol	Rated Output (kW)
5	0.5
10 to 80	1.0 to 8.0
11K to 55K	11.0 to 55.0

Note:
1. Refer to motor specifications in this catalog for correct symbol to use for each servo motor.

Stocked Motors

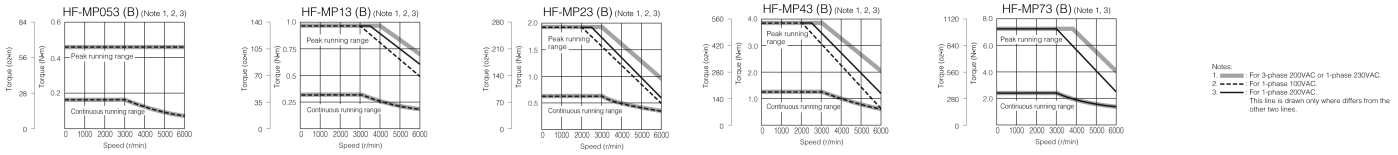
Model Number
HF-SP524K
HF-SP524BK
HF-SP1024K
HF-SP1024BK
HF-SP1524K
HF-SP1524BK
HF-SP2024K
HF-SP2024BK
HF-SP3524K
HF-SP3524BK
HF-SP5024K
HF-SP5024BK
HF-SP7024K
HF-SP7024BK

Model Number
HA-LP11K24K
HA-LP11K24BK
HA-LP15K24K
HA-LP15K24BK
HA-LP22K24K
HA-LP22K24BK

HF-MP Series 200V Servomotor Specifications

Servomotor Model HF-MP□		053(B)	13(B)	23(B)	43(B)	73(B)
Servo Amplifier Model MR-J3-□-□		10A(1)/B(1)(-RJ006)/T(1)		20A(1)/B(1)(-RJ006)/T(1)	40A(1)/B(1)(-RJ006)/T(1)	70A/B/(-RJ006)/T
Power Facility Capacity (kVA) (*1)		0.3	0.3	0.5	0.9	1.3
Continuous Running Duty	Rated output (kW)	0.05	0.1	0.2	0.4	0.75
	Rated torque (N•m [oz•in])	0.16 (22.7)	0.32 (45.3)	0.64 (90.6)	1.3 (184)	2.4 (340)
Maximum Torque (N•m [oz•in])		0.48 (68)	0.95 (135)	1.9 (269)	3.8 (538)	7.2 (1020)
Rated Speed (r/min)		3000				
Maximum Speed (r/min)		6000				
Permissible Instantaneous Speed (r/min)		6900				
Power Rate at Continuous Rated Torque (kW/s)		13.3	31.7	46.1	111.6	95.5
Rated Current (A)		1.1	0.9	1.6	2.7	5.6
Maximum Current (A)		3.2	2.8	5.0	8.6	16.7
Regen Braking Frequency (*2) (times/min)		Refer to Manual	Refer to Manual	1570	920	420
Moment of Inertia J (x10^{-4}kg•m^2) [J (oz•in^2)]	Standard	0.019 (0.104)	0.032 (0.175)	0.088 (0.481)	0.15 (0.82)	0.60 (3.28)
	With Electromagnetic Brake	0.025 (0.137)	0.039 (0.213)	0.12 (0.656)	0.18 (0.984)	0.70 (3.83)
Recommended Load/Motor Inertia Moment Ratio		30 times the servomotor's inertia moment maximum (*3)				
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)				
Attachments		—	Oil seal – Part number would be HF-MP□J			
Insulation Class		Class B				
Structure		Totally enclosed non-ventilated (protection level: IP65) (*4)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Elevation / Vibration	1000m or less above sea level/ X,Y:49m/s^2				
Mass kg (lb)	Standard	0.35 (0.772)	0.56 (1.24)	0.94 (2.07)	1.5 (3.31)	2.9 (6.39)
	With electromagnetic brake	0.65 (1.5)	0.86 (1.9)	1.6 (3.6)	2.1 (4.7)	3.9 (8.6)

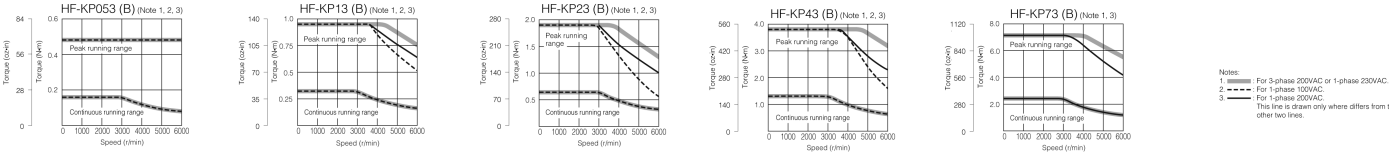
Notes:
1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.


HF-MP053 (B) (Note 1, 2, 3)
HF-MP13 (B) (Note 1, 2, 3)
HF-MP23 (B) (Note 1, 2, 3)
HF-MP43 (B) (Note 1, 2, 3)
HF-MP73 (B) (Note 1, 3)
Peak running range
Continuous running range
Torque (oz•in)
Torque (N•m)
Speed (r/min)
Notes:
1. For 3-phase 200VAC or 1-phase 230VAC.
2. For 1-phase 100VAC.
3. For 1-phase 200VAC.
This line is drawn only where differs from the other two lines.

HF-KP Series 200V Servomotor Specifications

Servomotor Model HF-KP□		053(B)	13(B)	23(B)	43(B)	73(B)
Servo Amplifier Model MR-J3-□-□		10A(1)/B(1)(-RJ006)/T(1)		20A(1)/B(1)(-RJ006)/ T(1)	40A(1)/B(1)(-RJ006)/T(1)	70A/B/(-RJ006)/T
Power Facility Capacity (kVA) (*1)		0.3	0.3	0.5	0.9	1.3
Continuous Running Duty	Rated Output (kW)	0.05	0.1	0.2	0.4	0.75
	Rated Torque (N•m [oz•in])	0.16 (22.7)	0.32 (45.3)	0.64 (90.6)	1.3 (184)	2.4 (340)
Maximum Torque (N•m [oz•in])		0.48 (68)	0.95 (135)	1.9 (269)	3.8 (538)	7.2 (1020)
Rated Speed (r/min)		3000				
Maximum Speed (r/min)		6000				
Permissible Instantaneous Speed (r/min)		6900				
Power Rate at Continuous Rated Torque (kW/s)		4.87	11.5	16.9	38.6	39.9
Rated Current (A)		0.9	0.8	1.4	2.7	5.2
Maximum Current (A)		2.7	2.4	4.2	8.1	15.6
Regenerative Braking Frequency (*2) (times/min)		Refer to Manual	Refer to Manual	448	249	140
Moment Of Inertia J (x10^{-4}kg•m^2) [J (oz•in^2)]	Standard	0.052 (0.284)	0.088 (0.481)	0.24 (1.31)	0.42 (2.30)	1.43 (7.82)
	With Electromagnetic Brake	0.054 (0.295)	0.090 (0.492)	0.31 (1.69)	0.50 (2.73)	1.63 (8.91)
Recommended Load/Motor Inertia Moment Ratio		15 times the servomotor's inertia moment maximum (*3)		24 times the servomotor's inertia moment maximum (*3)	22 times the servomotor's inertia moment maximum	15 times the servomotor's inertia moment maximum
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)				
Attachments		—	Oil seal – Part number would be HF-KP□J			
Insulation Class		Class B				
Structure		Totally enclosed non-ventilated (protection level: IP65) (*4)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Elevation / Vibration	1000m or less above sea level/ X,Y:49m/s^2				
Mass kg (lb)	Standard	0.35 (0.772)	0.56 (1.24)	0.94 (2.07)	1.5 (3.31)	2.9 (6.39)
	With Electromagnetic Brake	0.65 (1.5)	0.86 (1.9)	1.6 (3.6)	2.1 (4.7)	3.9 (8.6)

Notes:
1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.

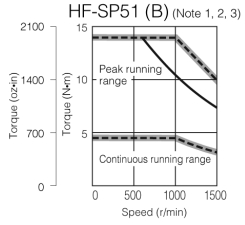

HF-KP053 (B) (Note 1, 2, 3)
HF-KP13 (B) (Note 1, 2, 3)
HF-KP23 (B) (Note 1, 2, 3)
HF-KP43 (B) (Note 1, 2, 3)
HF-KP73 (B) (Note 1, 3)
Peak running range
Continuous running range
Torque (oz•in)
Torque (N•m)
Speed (r/min)
Notes:
1. For 3-phase 200VAC or 1-phase 230VAC.
2. For 1-phase 100VAC.
3. For 1-phase 200VAC.
This line is drawn only where differs from the other two lines.

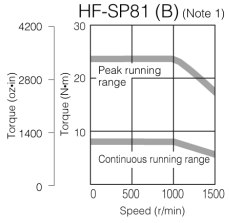
HF-SP 1000r/min Series 200V Servomotor Specifications

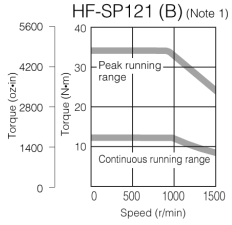
Servomotor Model HF-SP□		51(B)	81(B)	121(B)	201(B)	301(B)	421(B)
Servo Amplifier Model MR-J3-□-□		60A/B(-RJ006)/T	100A/B(-RJ006)/T	200A/B(-RJ006)/T		350A/B(-RJ006)/T	500A/B(-RJ006)/T
Power Facility Capacity (*1) (kVA)		1.0	1.5	2.1	3.5	4.8	6.3
Continuous Running Duty	Rated Output (kW)	0.5	0.85	1.2	2.0	3.0	4.2
	Rated Torque (N•m [oz•in])	4.77 (675)	8.12 (1150)	11.5 (1630)	19.1 (2710)	28.6 (4050)	40.1 (5679)
Maximum Torque (N•m [oz•in])		14.3 (2030)	24.4 (3460)	34.4 (4870)	57.3 (8110)	85.9 (12164)	120 (16993)
Rated Speed (r/min)		1000					
Maximum Speed (r/min)		1500					
Permissible Instantaneous Speed (r/min)		1725					
Power Rate at Continuous Rated Torque (kW/s)		19.2	37.0	34.3	48.6	84.6	104
Rated Current (A)		2.9	4.5	6.5	11	16	24
Maximum Current (A)		8.7	13.5	19.5	33	48	72
Regenerative Braking Frequency (Times/Min) (*2)		36	90	188	105	84	75
Moment Of Inertia J (x10^{-4}kg•m^2) [J (oz•in^2)]	Standard	11.9 (65.1)	17.8 (97.3)	38.3 (290)	75.0 (410)	97.0 (530)	154 (842)
	With Electromagnetic Brake	14.0 (76.5)	20.0 (109)	47.9 (262)	84.7 (463)	107 (585)	164 (897)
Recommended Load/Motor Inertia Moment Ratio		15 times the servomotor's inertia moment maximum (*3)					
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)					
Attachments		Oil seal – Part number would be HF-SP□J					
Insulation Class		Class F					
Structure		Totally enclosed non-ventilated (protection level: IP67) (*4)					
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)					
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)					
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust					
	Elevation / Vibration (*5)	1000m or less above sea level/ X: 24.5m/s^2 Y: 24.5m/s^2		1000m or less above sea level/ X: 24.5m/s^2 Y: 49m/s^2		1000m or less above sea level/ X: 24.5m/s^2 Y: 29.4m/s^2	
Mass kg (lb)	Standard	6.5 (15)	8.3 (19)	12 (27)	19 (42)	22 (49)	32 (71)
	With Electromagnetic Brake	8.5 (19)	10.3 (23)	18 (40)	25 (56)	28 (62)	38 (84)

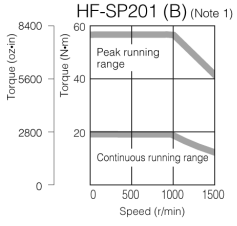
Notes:

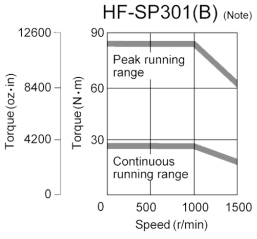
1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.

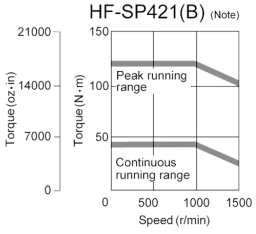












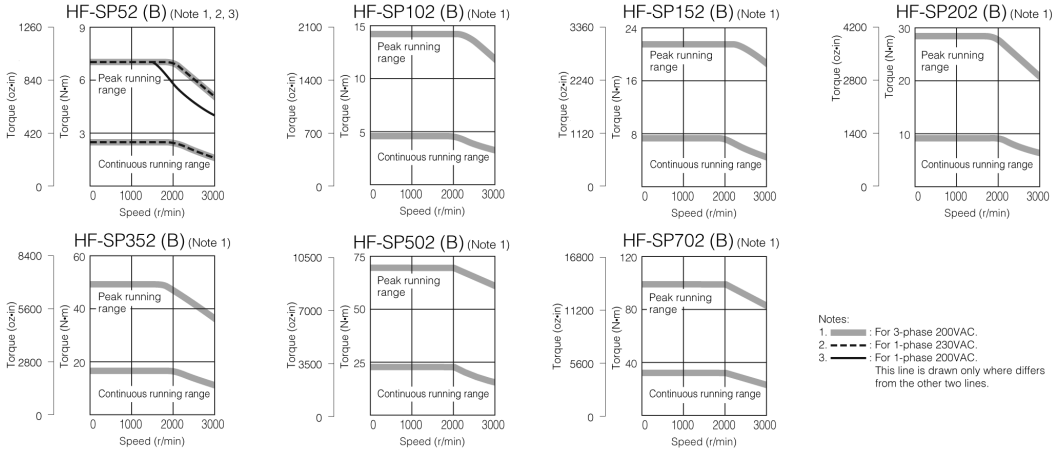
Notes:
1. ▬▬ : For 3-phase 200VAC.
2. - - - : For 1-phase 230VAC.
3. ——— : For 1-phase 200VAC. This line is drawn only where differs from the other two lines.

HF-SP 2000r/min Series 200V Servomotor Specifications

Servomotor Model HF-SP□		52(B)	102(B)	152(B)	202(B)	352(B)	502(B)	702(B)
Servo Amplifier Model MR-J3-□-□		60A/B(-RJ006)/T	100A/B(-RJ006)/T	200A/B(-RJ006)/T		350A/B (-RJ006)/T	500A/B (-RJ006)/T	700A/B (-RJ006)/T
Power Facility Capacity (kVA) (*1)		1.0	1.7	2.5	3.5	5.5	7.5	10
Continuous Running Duty	Rated Output (kW)	0.5	1.0	1.5	2.0	3.5	5.0	7.0
	Rated Torque (N•m [oz•in])	2.39 (338)	4.77 (675)	7.16 (1010)	9.55 (1350)	16.7 (2360)	23.9 (3380)	33.4 (4730)
Maximum Torque (N•m [oz•in])		7.16 (1010)	14.3 (2020)	21.5 (3040)	28.6 (4050)	50.1 (7090)	71.6 (10100)	100 (14200)
Rated Speed (r/min)		2000						
Maximum Speed (r/min)		3000						
Permissible Instantaneous Speed (r/min)		3450						
Power Rate Continuous Rated Torque (kW/s)		9.34	19.2	28.8	23.8	37.2	58.8	72.5
Rated Current (A)		2.9	5.3	8.0	10	16	24	33
Maximum Current (A)		8.7	15.9	24	30	48	72	99
Regenerative Braking Frequency (times/min) (*2)		60	62	152	71	33	37	31
Moment of inertia J ($x10^{-4}$kg•m^2) [J (oz•in^2)]	Standard	6.1 (33.4)	11.9 (65.1)	17.8 (97.3)	38.3 (209)	75.0 (410)	97.0 (530)	154 (842)
	With Electromagnetic Brake	8.3 (45.4)	14.0 (76.5)	20.0 (109)	47.9 (262)	84.7 (463)	107 (585)	164 (897)
Recommended Load/Motor Inertia Moment Ratio		15 times the servomotor's inertia moment maximum (*3)						
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144 p/rev)						
Attachments		Oil seal – Part number would be HF-SP□J						
Insulation Class		Class F						
Structure		Totally enclosed non-ventilated (protection level: IP67) (*4)						
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)						
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation / Vibration (*5)	1000m or less above sea level X: 24.5m/s^2 Y: 24.5m/s^2			1000m or less above sea level X: 24.5m/s^2 Y: 49m/s^2		1000m or less above sea level X: 24.5m/s^2 Y: 29.4m/s^2	
Mass kg (lb)	Standard	4.8 (11)	6.5 (15)	8.3 (19)	12 (27)	19 (42)	22 (49)	32 (71)
	With Electromagnetic Brake	6.7 (15)	8.5 (19)	10.3 (23)	18 (40)	25 (56)	28 (62)	38 (84)

Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.

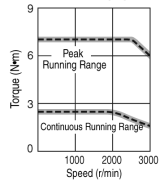

HF-SP52 (B) (Note 1, 2, 3)
HF-SP102 (B) (Note 1)
HF-SP152 (B) (Note 1)
HF-SP202 (B) (Note 1)
HF-SP352 (B) (Note 1)
HF-SP502 (B) (Note 1)
HF-SP702 (B) (Note 1)
Torque (oz•in)
Torque (N•m)
Peak running range
Continuous running range
Speed (r/min)
Notes:
1. : For 3-phase 200VAC.
2. : For 1-phase 230VAC.
3. : For 1-phase 200VAC.
This line is drawn only where differs from the other two lines.

HF-SP 2000r/min Series 400V Servomotor Specifications

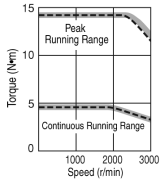
Servomotor Model HF-SP□		524(B)	1024(B)	1524(B)	2024(B)	3524(B)	5024(B)	7024(B)
Servo Amplifier Model MR-J3-□-□		60A4/B4 (-RJ006)/T4	100A4/B4 (-RJ006)/T4	200A4/B4(-RJ006)/T4		350A4/B4 (-RJ006)/T4	500A4/B4 (-RJ006)/T4	700A4/B4 (-RJ006)/T4
Power Facility Capacity (kVA) (*1)		1.0	1.7	2.5	3.5	5.5	7.5	10
Continuous Running Duty	Rated Output (kW)	0.5	1.0	1.5	2.0	3.5	5.0	7.0
	Rated Torque (N•m [oz•in])	2.39 (338)	4.77 (675)	7.16 (1010)	9.55 (1350)	16.7 (2360)	23.9 (3380)	33.4 (4730)
Maximum Torque (N•m [oz•in])		7.16 (1010)	14.3 (2020)	21.5 (3040)	28.6 (4050)	50.1 (7090)	71.6 (10100)	100 (14200)
Rated Speed (r/min)		2000						
Maximum Speed (r/min)		3000						
Permissible Instantaneous Speed (r/min)		3450						
Power Rate Continuous Rated Torque (kW/s)		9.34	19.2	28.8	23.8	37.2	58.8	72.5
Rated Current (A)		1.5	2.9	4.1	5.0	8.4	12	16
Maximum Current (A)		4.5	8.7	12	15	25	36	48
Regenerative Braking Freq. (times/min) (*2)		90	46	154	72	37	34	28
Moment of inertia J ($x10^{-4}$kg•m^2) [J (oz•in^2)]	Standard	6.1 (33.4)	11.9 (65.1)	17.8 (97.3)	38.3 (209)	75.0 (410)	97.0 (530)	154 (842)
	With Electromagnetic Brake	8.3 (45.4)	14.0 (76.5)	20.0 (109)	47.9 (262)	84.7 (463)	107 (585)	164 (897)
Recommended Load / Motor Inertia Moment Ratio		15 times the servomotor's inertia moment maximum (*3)						
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144 p/rev)						
Attachments		Oil seal – Part number would be HF-SP□J						
Insulation Class		Class F						
Structure		Totally enclosed non-ventilated (protection level: IP67) (*4)						
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)						
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation / Vibration (*5)	1000m or less above sea level X: 24.5m/s^2 Y: 24.5m/s^2			1000m or less above sea level X: 24.5m/s^2 Y: 49m/s^2		1000m or less above sea level X: 24.5m/s^2 Y: 29.4m/s^2	
Mass kg (lb)	Standard	4.8 (11)	6.7 (15)	8.5 (19)	13 (29)	19 (42)	22 (49)	32 (71)
	With Electromagnetic Brake	6.7 (15)	8.6 (19)	11 (24)	19 (42)	25 (56)	28 (62)	38 (84)

Notes:
1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.

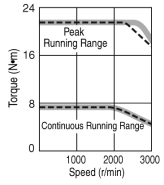
HF-SP524(B) (Note 1, 2)



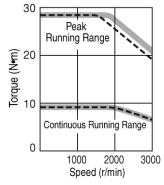
HF-SP1024(B) (Note 1, 2)



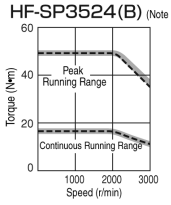
HF-SP1524(B) (Note 1, 2)



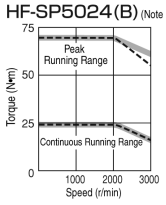
HF-SP2024(B) (Note 1, 2)



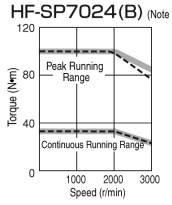
HF-SP3524(B) (Note 1, 2)



HF-SP5024(B) (Note 1, 2)



HF-SP7024(B) (Note 1, 2)



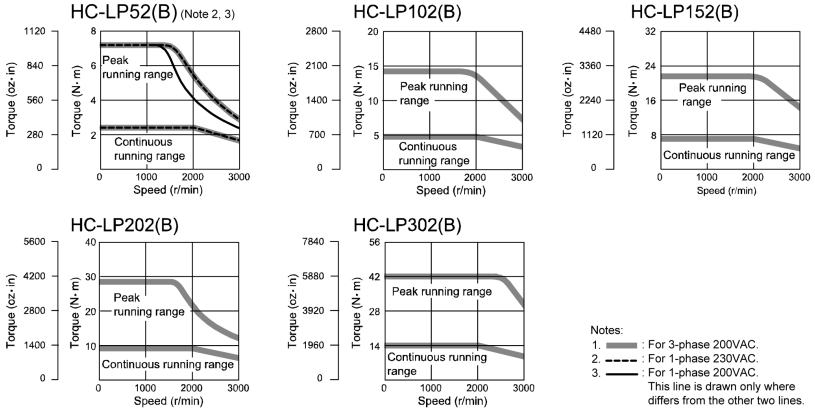
1. ——— : For 3-phase 400 VAC
2. - - - - : For 3-phase 380 VAC

HC-LP Series 200V Servomotor Specifications

Servomotor Model HC-LP□		52(B)	102(B)	152(B)	202(B)	302(B)
Servo Amplifier Model MR-J3-□-□		60A/B (-RJ006)/T	100A/B (-RJ006)/T	200A/B (-RJ006)/T	350A/B (-RJ006)/T	500A/B (-RJ006)/T
Power Facility Capacity (kVA) (*1)		1.0	1.7	2.5	3.5	4.8
Continuous Running Duty	Rated Output (kW)	0.5	1.0	1.5	2.0	3.0
	Rated Torque (N•m [oz•in])	2.39 (338)	4.78 (677)	7.16 (1010)	9.55 (1350)	14.3 (2020)
Maximum Torque (N•m [oz•in])		7.16 (1010)	14.4 (2040)	21.6 (3060)	28.5 (4040)	42.9 (6070)
Rated Speed (r/min)		2000				
Maximum Speed (r/min)		3000				
Permissible Instantaneous Speed (r/min)		3450				
Power Rate At Continuous Rated Torque (kW/s)		18.4	49.3	79.8	41.5	56.8
Rated Current (A)		3.2	5.9	9.9	14	23
Maximum Current (A)		9.6	18	30	42	69
Regenerative Braking Frequency (Times/Min) (*2)		115	160	425	120	70
Moment Of Inertia J ($x10^{-4}$kg•m²) [J (oz•in²)]	Standard	3.10 (16.9)	4.62 (25.3)	6.42 (35.1)	22.0 (120)	36.0 (197)
	With Electromagnetic Brake	5.20 (28.4)	6.72 (36.7)	8.52 (46.6)	32.0 (175)	46.0 (252)
Recommended Load/Motor Inertia Moment Ratio		10 times the servomotor's inertia moment maximum (*3)				
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)				
Attachments		Oil seal – Part number would be HC-LP□J				
Insulation Class		Class F				
Structure		Totally enclosed non-ventilated (protection level: IP65) (*4)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Elevation / Vibration (*5)	1000m or less above sea level X: 9.8m/s² Y: 24.5m/s²			1000m or less above sea level X: 19.6m/s² Y: 49m/s²	
Mass kg (lb)	Standard	6.5 (15)	8.0 (18)	10 (22)	21 (47)	28 (62)
	With Electromagnetic Brake	9.0 (20)	11 (25)	13 (29)	27 (60)	34 (75)

Notes:

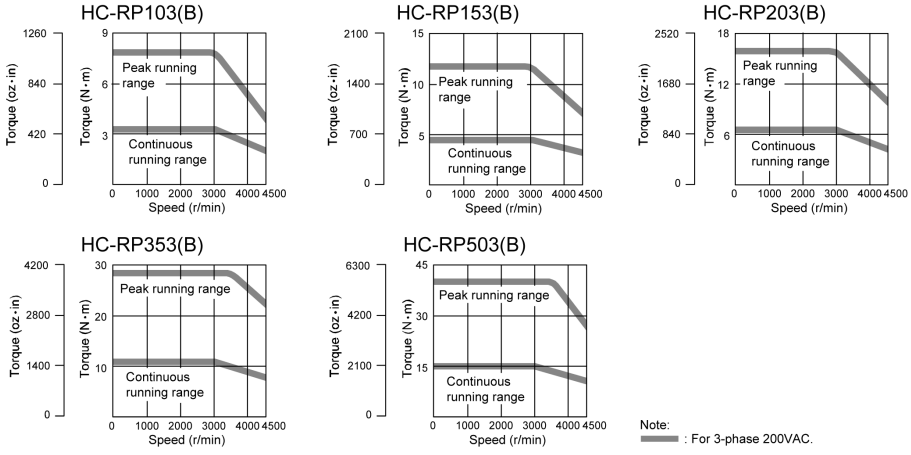
1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value



HC-RP Series 200V Servomotor Specifications

Servomotor Model HC-RP□		103(B)	153(B)	203(B)	353(B)	503(B)
Servo Amplifier Model MR-J3-□-□		200A/B(-RJ006)/T		350A/B(-RJ006)/T	500A/B(-RJ006)/T	
Power Facility Capacity (kVA) (*1)		1.7	2.5	3.5	5.5	7.5
Continuous Running Duty	Rated Output (kW)	1.0	1.5	2.0	3.5	5.0
	Rated Torque (N•m [oz•in])	3.18 (450)	4.78 (677)	6.37 (902)	11.1 (1570)	15.9 (2250)
Maximum Torque (N•m [oz•in])		7.95 (1130)	11.9 (1690)	15.9 (2250)	27.9 (3950)	39.7 (5620)
Rated Speed (r/min)		3000				
Maximum Speed (r/min)		4500				
Permissible Instantaneous Speed (r/min)		5175				
Power Rate At Continuous Rated Torque (kW/s)		67.4	120	176	150	211
Rated Current (A)		6.1	8.8	14	23	28
Maximum Current (A)		18	23	37	58	70
Regen Braking Frequency (times/min) (*2)		1090	860	710	174	125
Moment Of inertia J (x10^{-4}kg•m^2) [J (oz•in^2)]	Standard	1.50 (8.20)	1.90 (10.4)	2.30 (12.6)	8.30 (45.4)	12.0 (65.6)
	With Electromagnetic Brake	1.85 (10.1)	2.25 (12.3)	2.65 (14.5)	11.8 (64.5)	15.5 (84.7)
Recommended Load/Motor Inertia Moment Ratio		5 times the servomotor's inertia moment maximum (*3)				
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)				
Attachments		Oil seal – Part number would be HC-RP□J				
Insulation Class		Class F				
Structure		Totally enclosed non-ventilated (protection level: IP65) (*4)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Elevation/Vibration (*5)	1000m or less above sea level X, Y: 24.5m/s^2				
Mass kg (lb)	Standard	3.9 (8.6)	5.0 (11)	6.2 (14)	12 (27)	17 (38)
	With Electromagnetic Brake	6.0 (14)	7.0 (16)	8.3 (19)	15 (33)	21 (47)

Notes:
1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.

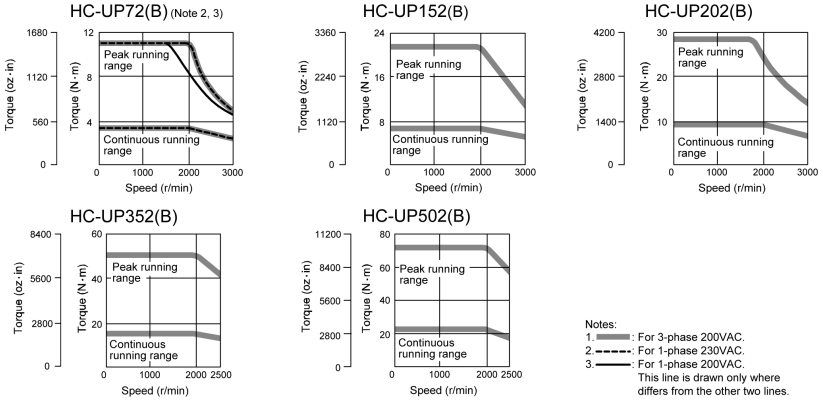


HC-UP Series 200V Servomotor Specifications

Servomotor Model HC-UP□		72(B)	152(B)	202(B)	352(B)	502(B)
Servo Amplifier Model MR-J3-□-□		70A/B(-RJ006)/T	200A/B(-RJ006)/T	350A/B(-RJ006)/T	500A/B(-RJ006)/T	
Power Facility Capacity (kVA) (*1)		1.3	2.5	3.5	5.5	7.5
Continuous Running Duty	Rated Output (kW)	0.75	1.5	2.0	3.5	5.0
	Rated Torque (N•m [oz•in])	3.58 (507)	7.16 (1010)	9.55 (1350)	16.7 (2360)	23.9 (3380)
Maximum Torque (N•m [oz•in])		10.7 (1520)	21.6 (3060)	28.5 (4040)	50.1 (7090)	71.6 (10100)
Rated Speed (r/min)		2000				
Maximum Speed (r/min)		3000			2500	
Permissible Instantaneous Speed (r/min)		3450			2875	
Power Rate At Continuous Rated Torque (kW/s)		12.3	23.2	23.9	36.5	49.6
Rated Current (A)		5.4	9.7	14	23	28
Maximum Current (A)		16	29	42	69	84
Regen Braking Frequency (times/min) (*2)		53	124	68	44	31
Moment Of Inertia J (x10^{-4}kg•m^2) [J (oz•in^2)]	Standard	10.4 (56.9)	22.1 (121)	38.2 (209)	76.5 (418)	115 (629)
	With Electromagnetic Brake	12.5 (68.3)	24.2 (132)	46.8 (256)	85.1 (465)	124 (678)
Recommended Load / Motor Inertia Moment Ratio		15 times the servomotor's inertia moment maximum (*3)				
Speed / Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)				
Attachments		Oil seal – Part number would be HC-UP□J				
Insulation Class		Class F				
Structure		Totally enclosed non-ventilated (protection level: IP65) (*4)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)				
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Elevation / Vibration (*5)	1000m or less above sea level X, Y: 24.5m/s^2		1000m or less above sea level X: 24.5m/s^2 Y: 49m/s^2		
Mass kg (lb)	Standard	8.0 (18)	11 (25)	16 (36)	20 (44)	24 (53)
	With Electromagnetic Brake	10 (22)	13 (29)	22 (49)	26 (58)	30 (67)

Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.



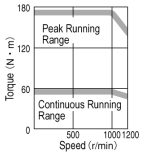
HA-LP 1000r/min Series 200V Servomotor Specifications

Servomotor Model HA-LP□		601(B)	801(B)	12K1(B)	15K1	20K1	25K1	30K1	37K1
Servo Amplifier Model MR-J3-□-□		700A/B(-RJ006)/T	11KA/B(-RJ006)/T		15KA/B(-RJ006)/T	22KA/B(-RJ006)/T		DU30KA/B	DU37KA/B
Power Facility Capacity (kVA) (*1)		8.6	12	18	22	30	38	48	59
Continuous Running Duty	Rated Output (kW)	6.0	8.0	12	15	20	25	30	37
	Rated Torque (N•m [oz•in])	57.3 (8113.7)	76.4 (10818.2)	115 (16284)	143 (20248.8)	191 (27045.6)	239 (33842.4)	286 (40497.6)	353 (49984.8)
Maximum Torque (N•m [oz•in])		172 (24355.2)	229 (32426.4)	344 (48710.4)	415 (58764)	477 (67543.2)	597 (84535.2)	716 (101385.6)	883 (125032.8)
Rated Speed (r/min)		1000							
Maximum Speed (r/min)		1200							
Permissible Instantaneous Speed (r/min)		1380							
Power Rate At Continuous Rated Torque (kW/s)		313	265	445	373	561	528	626	668
Rated Current (A)		34	42	61	83	118	118	154	188
Maximum Current (A)		102	126	183	249	295	295	385	470
Regen Braking Frequency (times/min) (*2)		158	354 (*6)	264 (*6)	230 (*6)	195 (*6)	117 (*6)	—	—
Moment Of Inertia J (x10^{-4} kg•m^2) [J (oz•in^2)]	Standard	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)	1310 (7161.2)	1870 (10222.5)
	With Electromagnetic Brake	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—	—	—	—
Recommended Load / Motor Inertia Moment Ratio		10 times the servomotor's inertia moment maximum (*3)							
Speed / Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)							
Attachments		Oil seal – Part number would be HA-LP□J							
Insulation Class		Class F							
Structure		Totally enclosed ventilated (protection level: IP44) (*4)							
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)							
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)							
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust							
	Elevation/ Vibration (*5)	1000m or less above sea level X: 11.7m/s^2 Y: 29.4m/s^2			1000m or less above sea level X: 9.8m/s^2 Y: 9.8m/s^2				
Mass kg (lb)	Standard	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)	250 (550.8)	335 (738)
	With Electromagnetic Brake	70 (154.2)	130 (290)	150 (335)	—	—	—	—	—
Cooling Fan Power	Voltage, Frequency	1-phase 200 to 220VAC/50Hz 1-phase 200 to 230VAC/60Hz	3-phase 200 to 220VAC/50Hz 3-phase 200 to 230VAC/60Hz						
	Input (W)	42 (50Hz)/54 (60Hz)	62 (50Hz) / 76 (60Hz)		65 (50Hz) / 85 (60Hz)		120 (50Hz) / 175 (60Hz)		
Cooling Fan Rated Current (A)		0.21(50Hz)/0.25 (60Hz)	0.18 (50Hz) / 0.17 (60Hz)		0.20 (50Hz) / 0.22 (60Hz)		0.65 (50Hz) / 0.80 (60Hz)		

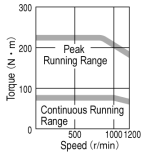
Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.
6. This applies when the GRZG400- □ Ω regeneration resistors are used as a standard accessory and parameter PA02 is changed with cooling fan (1.0m^3/min, the □92x2 unit) installed.

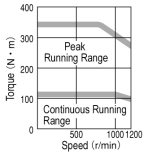
HA-LP601(B) (Note 1)



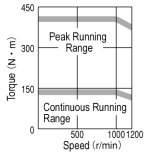
HA-LP801(B) (Note 1)



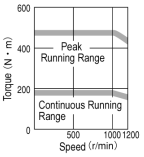
HA-LP12K1(B) (Note 1)



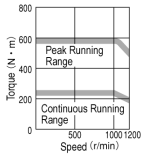
HA-LP15K1 (Note 1)



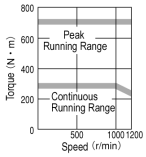
HA-LP20K1 (Note 1)



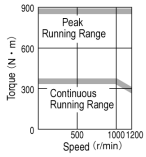
HA-LP25K1 (Note 1)



HA-LP30K1 (Note 1)



HA-LP37K1 (Note 1)



1. ▬▬ : For 3-Phase 200 VAC

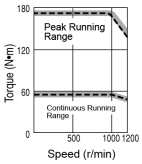
HA-LP 1000r/min Series 400V Servomotor Specifications

Servomotor Model HA-LP□		6014(B)	8014(B)	12K14(B)	15K14	20K14	25K14	30K14	37K14
Servo Amplifier Model MR-J3-□-□		700A4/B4 (-RJ006)/T4	11KA4/B4(-RJ006)/T4		15KA4/B4 (-RJ006)/ T4	22KA4/B4 (-RJ006)/T4	DU30KA4/B4		DU37KA4/B4
Power Facility Capacity (kVA) (*1)		8.6	12	18	22	30	38	48	59
Continuous Running Duty	Rated Output (kW)	6.0	8.0	12	15	20	25	30	37
	Rated Torque (N•m [oz•in])	57.3 (8113.7)	76.4 (10818.2)	115 (16284)	143 (20248.8)	191 (27045.6)	239 (33842.4)	286 (40497.6)	353 (49984.8)
Maximum Torque (N•m [oz•in])		172 (24355.2)	229 (32426.4)	344 (48710.4)	415 (58764)	477 (67543.2)	597 (84535.2)	716 (101385.6)	883 (125032.8)
Rated Speed (r/min)		1000							
Maximum Speed (r/min)		1200							
Permissible Instantaneous Speed (r/min)		1380							
Power Rate At Continuous Rated Torque (kW/s)		313	265	445	373	561	528	626	668
Rated Current (A)		17	20	30	40	55	70	77	95
Maximum Current (A)		51	60	90	120	138	175	193	238
Regen Braking Frequency (times/min) (*2)		169	354 (*6)	264 (*6)	230 (*6)	195 (*6)	—	—	—
Moment Of Inertia J (x10^{-4} kg•m^2) [J (oz•in^2)]	Standard	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)	1310 (7161.2)	1870 (10222.5)
	With Electromagnetic Brake	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—	—	—	—
Recommended Load/Motor Inertia Moment Ratio		10 times the servomotor's inertia moment maximum (*3)							
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)							
Attachments		Oil seal – Part number would be HA-LP□J							
Insulation Class		Class F							
Structure		Totally enclosed ventilated (protection level: IP44) (*4)							
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)							
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)							
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust							
	Elevation / Vibration (*5)	1000m or less above sea level X: 11.7m/s^2 Y: 29.4m/s^2			1000m or less above sea level X: 9.8m/s^2 Y: 9.8m/s^2				
Mass kg (lb)	Standard	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)	250 (550.8)	335 (738)
	With Electromagnetic Brake	70 (154.2)	130 (290)	150 (335)	—	—	—	—	—
Cooling Fan Power	Voltage, Frequency	1-phase 200 to 220VAC/50Hz 1-phase 200 to 230VAC/60Hz	3-phase 380 to 440VAC 50Hz 3-phase 380 to 480 VAC 60Hz		3-phase 380 to 460VAC 50Hz 3-phase 380 to 480VAC 60Hz				
	Input (W)	42 (50Hz)/ 54 (60Hz)	62 (50Hz)/76 (60Hz)		65 (50Hz)/85 (60Hz)		110 (50Hz)/150 (60Hz)		
Cooling Fan Rated Current (A)		0.21 (50Hz)/ 0.25 (60Hz)	0.14 (50Hz)/0.11 (60Hz)		0.12 (50Hz)/0.14 (60Hz)		0.20 (50Hz)/0.22 (60Hz)		

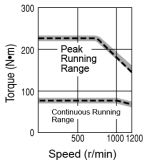
Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.
6. This applies when the GRZG400- □Ω regeneration resistors are used as a standard accessory and parameter PA02 is changed with cooling fan (1.0m^3/min, the □92x2 unit) installed.

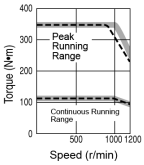
HA-LP6014(B) (Note 1, 2)



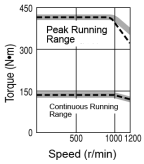
HA-LP8014(B) (Note 1, 2, 3)



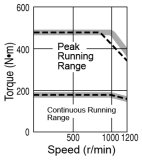
HA-LP12K14(B) (Note 1, 2)



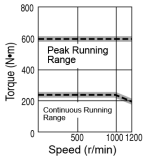
HA-LP15K14



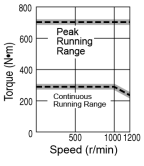
HA-LP20K14 (Note 1, 2, 3)



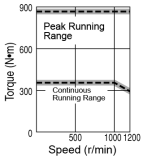
HA-LP25K14 (Note 1, 2)



HA-LP30K14 (Note 1, 2)



HA-LP37K14



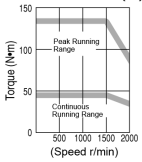
Notes:
1. ▬▬: For 3-phase 200VAC.
2. - - - -: For 1-phase 230VAC.
3. ——: For 1-phase 200VAC. This line is drawn only where differs from the other two lines.

HA-LP 1500r/min Series 200V Servomotor Specifications

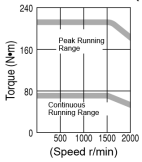
Servomotor Model HA-LP□		701M(B)	11K1M(B)	15K1M(B)	22K1M	30K1M	37K1M
Servo Amplifier Model MR-J3-□-□		700A/B(-RJ006)/T	11KA/B(-RJ006)/T	15KA/B(-RJ006)/T	22KA/B(-RJ006)/T	DU30KA/B	DU37KA/B
Power Facility Capacity (kVA) (*1)		10	16	22	33	48	59
Continuous Running Duty	Rated Output (kW)	7.0	11	15	22	30	37
	Rated Torque (N•m [oz•in])	44.6 (6315.4)	70.0 (9912)	95.5 (13522.8)	140 (19824)	191 (27045.6)	236 (33417.6)
Maximum Torque (N•m [oz•in])		134 (18974.4)	210 (29736)	286 (40497.6)	350 (49560)	477 (67543.2)	589 (83402.4)
Rated Speed (r/min)		1500					
Maximum Speed (r/min)		2000					
Permissible Instantaneous Speed (r/min)		2300					
Power Rate at Continuous Rated Torque (kW/s)		189	223	309	357	561	514
Rated Current (A)		37	65	87	126	174	202
Maximum Current (A)		111	195	261	315	435	505
Regen Braking Frequency (times/min) (*2)		70	158 (*6)	191 (*6)	102 (*6)	—	—
Moment Of inertia J (x10^{-4}kg•m^2) [J (oz•in^2)]	Standard	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)
	With Electromagnetic Brake	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—	—
Recommended Load / Motor Inertia Moment Ratio		10 times the servomotor's inertia moment maximum (*3)					
Speed / Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)					
Attachments		Oil seal – Part number would be HA-LP□J					
Insulation Class		Class F					
Structure		Totally enclosed ventilated (protection level: IP44) (*4)					
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)					
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)					
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust					
	Elevation / Vibration (*5)	1000m or less above sea level X: 11.7m/s^2 Y: 29.4m/s^2			1000m or less above sea level X: 9.8m/s^2 Y: 9.8m/s^2		
Mass kg (lb)	Standard	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)
	With Electromagnetic Brake	70 (154.2)	130 (290)	150 (335)	—	—	—
Cooling Fan Power	Voltage, Frequency	1-phase 200 to 220VAC / 50 Hz 1-phase 200 to 230VAC / 60Hz	3-phase 200 to 230VAC 50/60Hz				
	Input (W)	42 (50Hz) / 54 (60Hz)	62 (50Hz) / 76 (60Hz)		65 (50Hz) / 85 (60Hz)		120 (50Hz) / 175 (60Hz)
Cooling Fan Rated Current (A)		0.21 (50Hz) / 0.25 (60Hz)	0.18 (50Hz) / 0.17 (60Hz)		0.20 (50Hz) / 0.22 (60Hz)		0.65 (50Hz) / 0.80 (60Hz)

Notes:
1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.
6. This applies when the GRZG400- □ Ω regeneration resistors are used as a standard accessory and parameter PA02 is changed with cooling fan (1.0m^3/min, the □92x2 unit) installed.

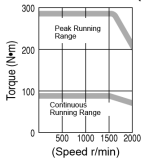
HA-LP701M(B)



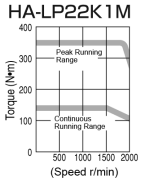
HA-LP11K1M(B)



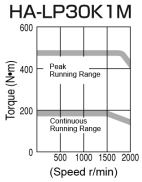
HA-LP15K1M(B)



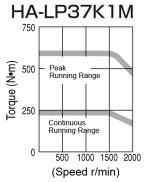
HA-LP22K1M



HA-LP30K1M



HA-LP37K1M



Notes:
1. ▬▬: For 3-phase 200VAC.

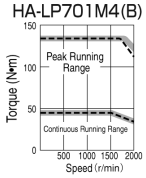
HA-LP 1500r/min Series 400V Servomotor Specifications

Servomotor Model HA-LP□		701M4(B)	11K1M4(B)	15K1M4(B)	22K1M4	30K1M4	37K1M4	45K1M4	50K1M4
Servo Amplifier Model MR-J3-□-□		700A4/B4 (-RJ006)/T4	11KA4/B4 (-RJ006)/T4	15KA4/B4(-RJ006)/T4	22KA4/B4 (-RJ006)/T4	DU30KA4/B4	DU37KA4/B4	DU45KA4/B4	DU55KA4/B4
Power Facility Capacity (kVA) (*1)		10	16	22	33	48	59	71	80
Continuous Running Duty	Rated Output (kW)	7.0	11	15	22	30	37	45	50
	Rated Torque (N•m [oz•in])	44.6 (6315.4)	70.0 (9912)	95.5 (13522.8)	140 (19824)	191 (27045.6)	236 (33417.6)	286 (40497.6)	318 (45028.8)
Maximum Torque (N•m [oz•in])		134 (18974.4)	210 (29736)	286 (40497.6)	350 (49560)	477 (67543.2)	589 (83402.4)	716 (101385.6)	796 (112713.6)
Rated Speed (r/min)		1500							
Maximum Speed (r/min)		2000							
Permissible Instantaneous Speed (r/min)		2300							
Power Rate At Continuous Rated Torque (kW/s)		189	223	309	357	561	514	626	542
Rated Current (A)		18	31	41	63	87	101	128	143
Maximum Current (A)		54	93	123	158	218	253	320	358
Regen Braking Frequency (times/min) (*2)		75	158 (*6)	191 (*6)	102 (*6)	—	—	—	—
Moment Of Inertia J (x10^{-4} kg•m^2) [J (oz•in^2)]	Standard	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)	1310 (7161.2)	1870 (10222.5)
	With Electromagnetic Brake	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—	—	—	—
Recommended Load / Motor Inertia Moment Ratio		10 times the servomotor's inertia moment maximum (*3)							
Speed / Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)							
Attachments		Oil seal – Part number would be HA-LP□J							
Insulation class		Class F							
Structure		Totally enclosed ventilated (protection level: IP44) (*4)							
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)							
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)							
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust							
	Elevation / Vibration (*5)	1000m or less above sea level X: 11.7m/s^2 Y: 29.4m/s^2			1000m or less above sea level X: 9.8m/s^2 Y: 9.8m/s^2				
Mass kg (lb)	Standard	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)	250 (550.8)	335 (738)
	With Electromagnetic Brake	70 (154.2)	130 (290)	150 (335)	—	—	—	—	—
Cooling Fan Power	Voltage, Frequency	1-phase 200 to 220VAC/50Hz 1-phase 200 to 230VAC/60Hz	3-phase 380 to 440VAC 50Hz 3-phase 380 to 480VAC 60Hz		3-phase 380 to 460VAC 50Hz 3-phase 380 to 480VAC 60Hz				
	Input (W)	42 (50Hz)/54 (60Hz)	62 (50Hz) / 76 (60Hz)		65 (50Hz) / 85 (60Hz)		110 (50Hz) / 150 (60Hz)		
Cooling Fan Rated Current (A)		0.21 (50Hz) /0.25 (60Hz)	0.14 (50Hz) / 0.11 (60Hz)		0.12 (50Hz) / 0.14 (60Hz)		0.20 (50Hz) / 0.22 (60Hz)		

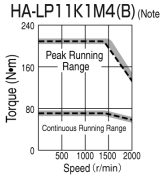
Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.
6. This applies when the GRZG400- □ Ω regeneration resistors are used as a standard accessory and parameter PA02 is changed with cooling fan (1.0m^3/min, the □92x2 unit) installed.

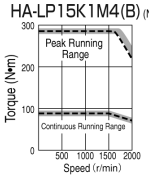
HA-LP701M4(B)



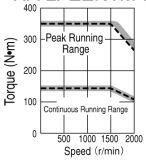
HA-LP11K1M4(B) (Note 1, 2)



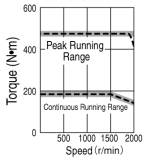
HA-LP15K1M4(B) (Note 1, 2)



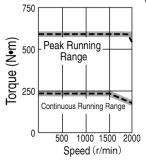
HA-LP22K1M4 (Note 1, 2)



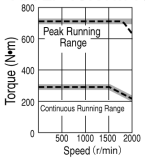
HA-LP30K1M4



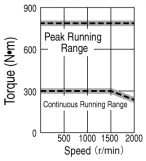
HA-LP37K1M4 (Note 1, 2)



HA-LP45K1M4 (Note 1, 2)



HA-LP50K1M4 (Note 1, 2)



1. ▬▬ : For 3-phase 400VAC
2. - - - - : For 3-phase 380VAC

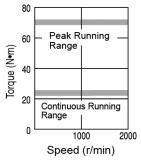
HA-LP 2000r/min Series 200V Servomotor Specifications

Servomotor Model HA-LP□		502	702	11K2(B)	15K2(B)	22K2(B)	30K2	37K2
Servo Amplifier Model MR-J3-□-□		600A/B(-RJ006)/T	700A/B(-RJ006)/T	11KA/B(-RJ006)/T	15KA/B(-RJ006)/T	22KA/B(-RJ006)/T	DU30KA/B	DU37KA/B
Power Facility Capacity (kVA) (*1)		7.5	10.0	16	22	33	48	59
Continuous Running Duty	Rated Output (kW)	5.0	7.0	11	15	22	30	37
	Rated Torque (N•m [oz•in])	23.9 (3384.2)	33.4 (4729.4)	52.5 (7434)	71.6 (10138.6)	105 (14868)	143 (20248.8)	177 (25063.2)
Maximum Torque (N•m [oz•in])		71.6 (10138.6)	100 (14160)	158 (22372.8)	215 (30444)	263 (37240.8)	358 (50692.8)	442 (62587.2)
Rated Speed (r/min)		2000						
Maximum Speed (r/min)		2000						
Permissible Instantaneous Speed (r/min)		2300						
Power Rate At Continuous Rated Torque (kW/s)		77.2	118	263	233	374	373	480
Rated Current (A)		25	34	63	77	112	166	204
Maximum Current (A)		75	102	189	231	280	415	510
Regen Braking Frequency (times/min) (*2)		50	50	186 (*6)	144 (*6)	107 (*6)	—	—
Moment Of Inertia J (x10^{-4} kg•m^2) [J (oz•in^2)]	Standard	74.0 (404.5)	94.2 (515.0)	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)
	With Electromagnetic Brake	—	—	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—
Recommended Load/Motor Inertia Moment Ratio		10 times the servomotor's inertia moment maximum (*3)						
Speed/Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)						
Attachments		Oil seal – Part number would be HA-LP□J						
Insulation Class		Class F						
Structure		Totally enclosed non-ventilated (protection level: IP65) (*4)		Totally enclosed ventilated (protection level: IP44) (*4)				
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)						
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation / Vibration	1000m or less above sea level X: 11.7m/s^2 Y: 29.4m/s^2					1000m or less above sea level X: 9.8m/s^2 Y: 9.8m/s^2	
Mass kg (lb)	Standard	28 (61.7)	35 (77.1)	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)
	With Electromagnetic Brake	—	—	70 (154.2)	130 (290)	150 (335)	—	—
Cooling Fan Power	Voltage, Frequency (*5)	—	—	1-phase 200 to 220 VAC/50Hz 1-phase 200 to 230 VAC/60Hz	3-phase 200 to 230VAC 50/60Hz			
	Input (W)	—	—	42 (50Hz) / 54 (60Hz)	65 (50Hz) / 76 (60Hz)		65 (50Hz) / 85 (60Hz)	
Cooling Fan Rated Current (A)		—	—	0.21 (50Hz)/ 0.25 (60Hz)	0.18 (50Hz) / 0.17 (60Hz)		0.20 (50Hz) / 0.22 (60Hz)	

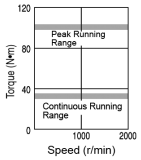
Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.
6. This applies when the GRZG400- □ Ω regeneration resistors are used as a standard accessory and parameter PA02 is changed with cooling fan (1.0m^3/min, the □92x2 unit) installed.

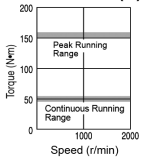
HA-LP502 (Note 1)



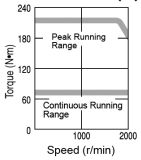
HA-LP702 (Note 1)



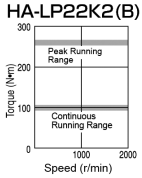
HA-LP11K2(B) (Note 1)



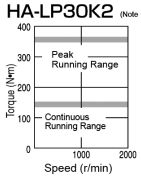
HA-LP15K2(B) (Note 1)



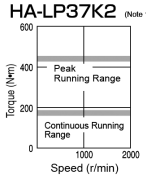
HA-LP22K2(B) (Note 1)



HA-LP30K2 (Note 1)



HA-LP37K2 (Note 1)



Notes:
1. ▬▬: For 3-phase 200VAC.

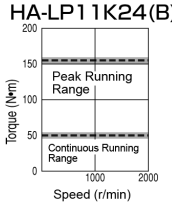
HA-LP 2000r/min Series 400V Servomotor Specifications

Servomotor Model HA-LP□		11K24(B)	15K24(B)	22K24(B)	30K24	37K24	45K24	55K24
Servo Amplifier Model MR-J3-□-□		11KA4/B4 (-RJ006)/T4	15KA4/B4 (-RJ006)/T4	22KA4/B4 (-RJ006)/T4	DU30KA4/B4	DU37KA4/B4	DU45KA4/B4	DU55KA4/B4
Power Facility Capacity (kVA) (*1)		16	22	33	48	59	71	87
Continuous Running Duty	Rated Output (kW)	11	15	22	30	37	45	55
	Rated Torque (N•m [oz•in])	52.5 (7434)	71.6 (10138.6)	105 (14868)	143 (20248.8)	177 (25063.2)	215 (30444)	263 (37240.8)
Maximum Torque (N•m [oz•in])		158 (22372.8)	215 (30444)	263 (37240.8)	358 (50692.8)	442 (62587.2)	537 (76039.2)	657 (93031.2)
Rated Speed (r/min)		2000						
Maximum Speed (r/min)		2000						
Permissible Instantaneous Speed (r/min)		2300						
Power Rate At Continuous Rated Torque (kW/s)		263	233	374	373	480	427	526
Rated Current (A)		32	40	57	83	102	131	143
Maximum Current (A)		96	120	143	208	255	328	358
Regen. Braking Frequency (times/min) (*2)		186 (*6)	144 (*6)	107 (*6)	—	—	—	—
Moment of Inertia J ($x10^{-4}$ kg•m^2) [J (oz•in^2)]	Standard	105 (574.0)	220 (1202.7)	295 (1612.6)	550 (3006.6)	650 (3553.3)	1080 (5903.9)	1310 (7161.2)
	With Electromagnetic Brake	113 (617.7)	293 (1601.7)	369 (2017.2)	—	—	—	—
Recommended Load / Motor Inertia Moment Ratio		10 times the servomotor's inertia moment maximum (*3)						
Speed / Position Detector		18-bit encoder (Resolution per encoder/servomotor rotation: 262144p/rev)						
Attachments		Oil seal – Part number would be HA-LP□J						
Insulation Class		Class F						
Structure		Totally enclosed ventilated (protection level: IP44) (*4)						
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)						
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation / Vibration (*5)	1000m or less above sea level X: 11.7m/s^2 Y: 29.4m/s^2			1000m or less above sea level X: 9.8m/s^2 Y: 9.8m/s^2			
Mass kg (lb)	Standard	55 (121.2)	95 (209.3)	115 (253.4)	160 (352.5)	180 (396.6)	230 (506.7)	250 (550.8)
	With Electromagnetic Brake	70 (154.2)	130 (290)	150 (335)	—	—	—	—
Cooling Fan Power	Voltage, Frequency	1-phase 200 to 220 VAC / 50Hz 1-phase 200 to 230 VAC / 60Hz	3-phase 380 to 440VAC 50Hz 3-phase 380 to 480VAC 60Hz		3-phase 380 to 460VAC 50Hz 3-phase 380 to 480VAC 60Hz			
	Input (W)	42 (50Hz) / 54 (60Hz)	62 (50Hz) / 76 (60Hz)		65 (50Hz) / 85 (60Hz)		110 (50Hz) / 150 (60Hz)	
Cooling Fan Rated Current (A)		0.21 (50Hz) / 0.25 (60Hz)	0.14 (50Hz) / 0.11 (60Hz)		0.12 (50Hz) / 0.14 (60Hz)		0.20 (50Hz) / 0.22 (60Hz)	

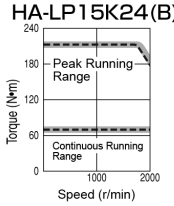
Notes:

1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load and the optional regeneration unit from the rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.
6. This applies when the GRZG400- □ Ω regeneration resistors are used as a standard accessory and parameter PA02 is changed with cooling fan (1.0m^3/min, the □92x2 unit) installed.

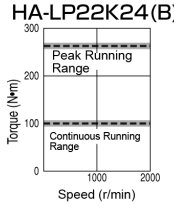
HA-LP11K24(B) (Note 1, 2)



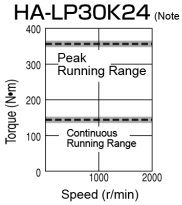
HA-LP15K24(B) (Note 1, 2)



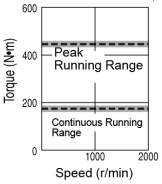
HA-LP22K24(B) (Note 1, 2)



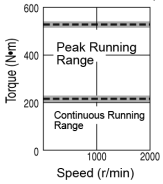
HA-LP30K24 (Note 1, 2)



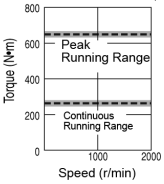
HA-LP37K24 (Note 1, 2)



HA-LP45K24 (Note 1, 2)



HA-LP55K24 (Note 1, 2)

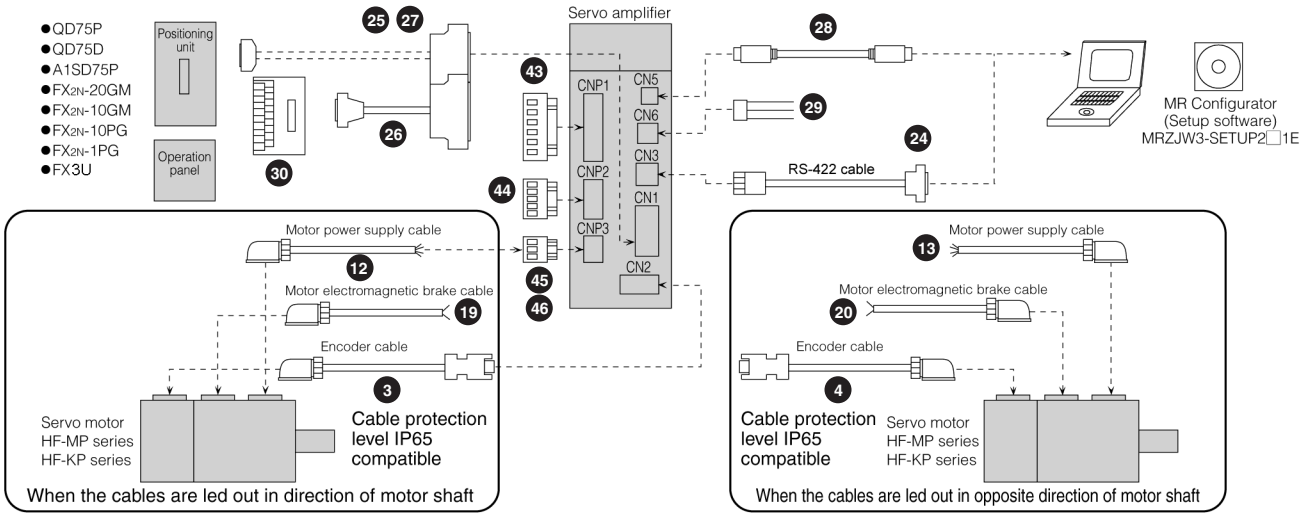


1. ▬▬ : For 3-phase 400VAC
2. - - - - : For 3-phase 380VAC

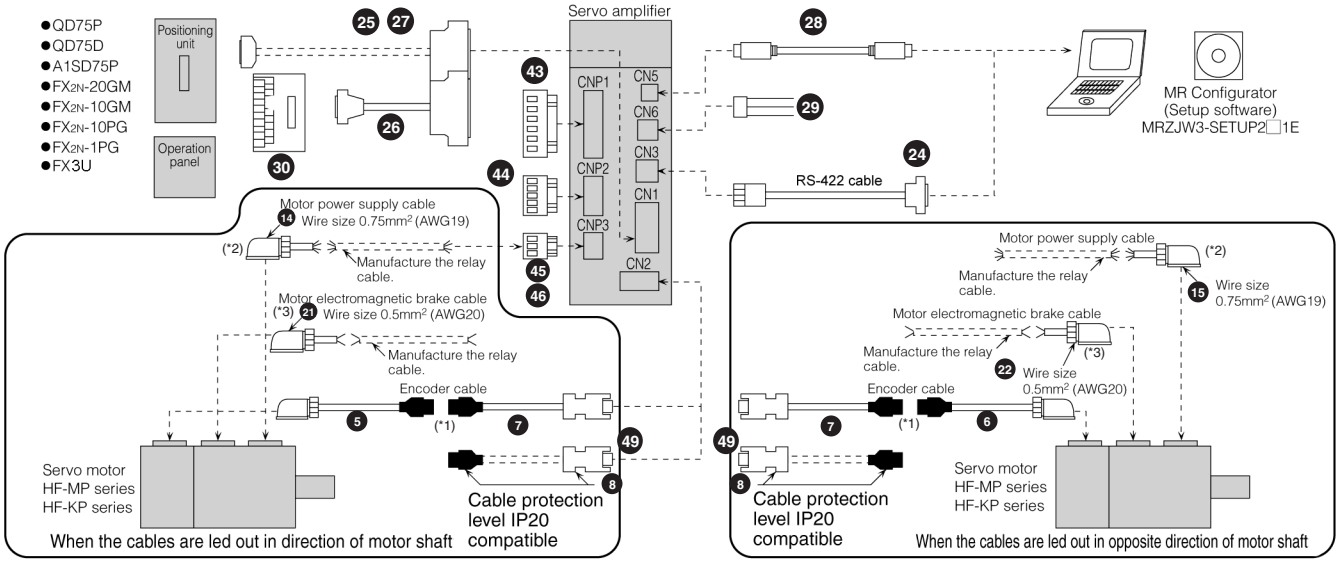
Ⓓ MR-J3 Cables and Connectors

MR-J3-A Cables and Connectors (A-Type)

HF-MP/HF-KP Series: Encoder cable length 10m or shorter

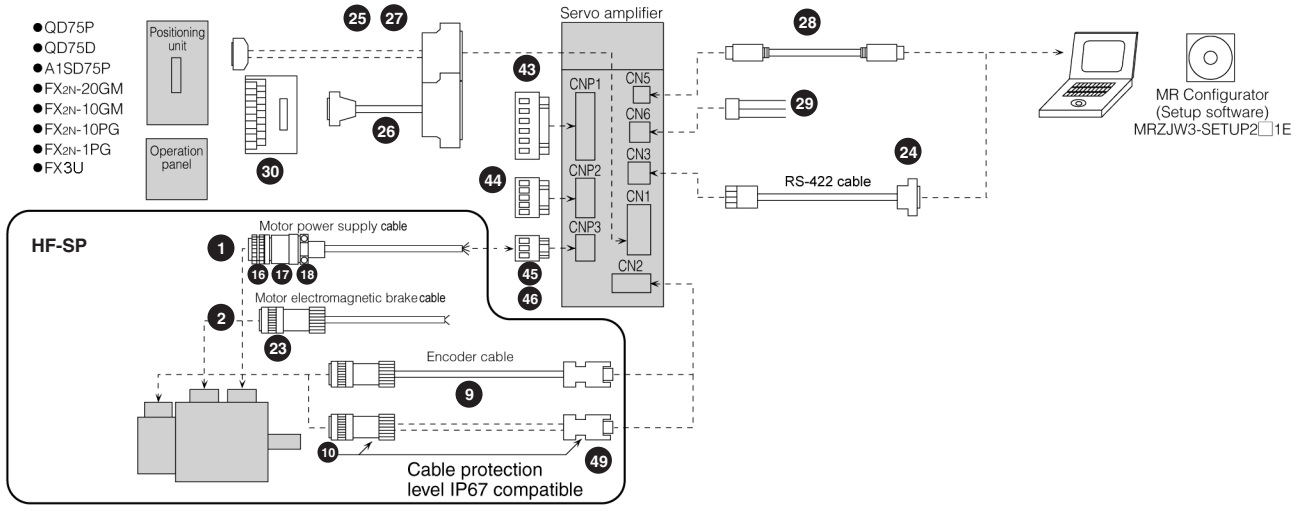


HF-MP/HF-KP Series: Encoder cable length over 10m

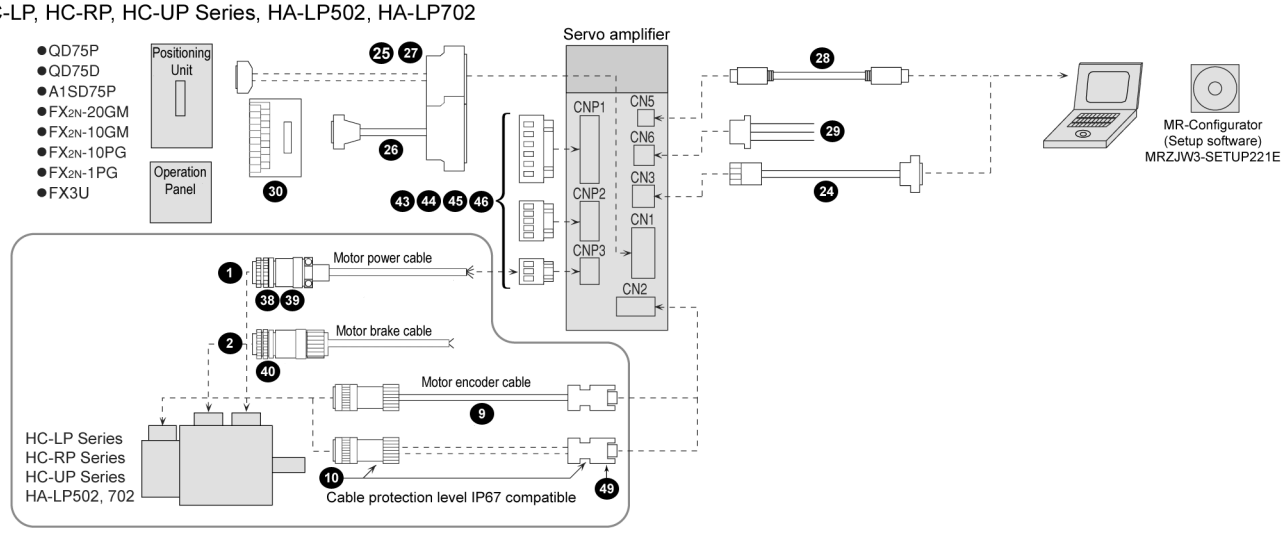


Notes: 1. This cable does not have a long bending life, please be sure to secure the cable before using.
2. If the length exceeds 10m, use the needed length extension cable (customer supplied) in junction with the MR-PWS2CBL03M-A1-L/-A2-L. This cable does not have a long bending life, please be sure to secure the cable before using. Refer to the MR-J3-T Amplifier Instruction Manual for information on manufacturing the extension cable.
3. If the length exceeds 10m, use the needed length extension cable (customer supplied) in junction with the MR-BKS2CBL03M-A1-L/-A2-L. This cable does not have a long bending life, please be sure to secure the cable before using. Refer to the MR-J3-T Amplifier Instruction Manual for information on manufacturing the extension cable.

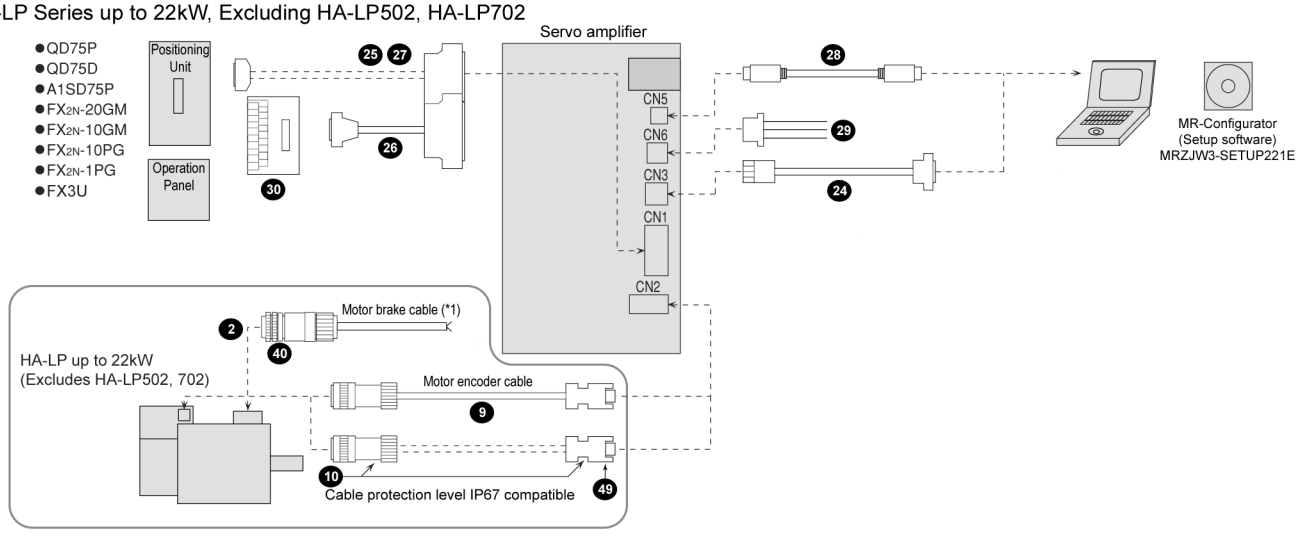
HF-SP Series



HC-LP, HC-RP, HC-UP Series, HA-LP502, HA-LP702

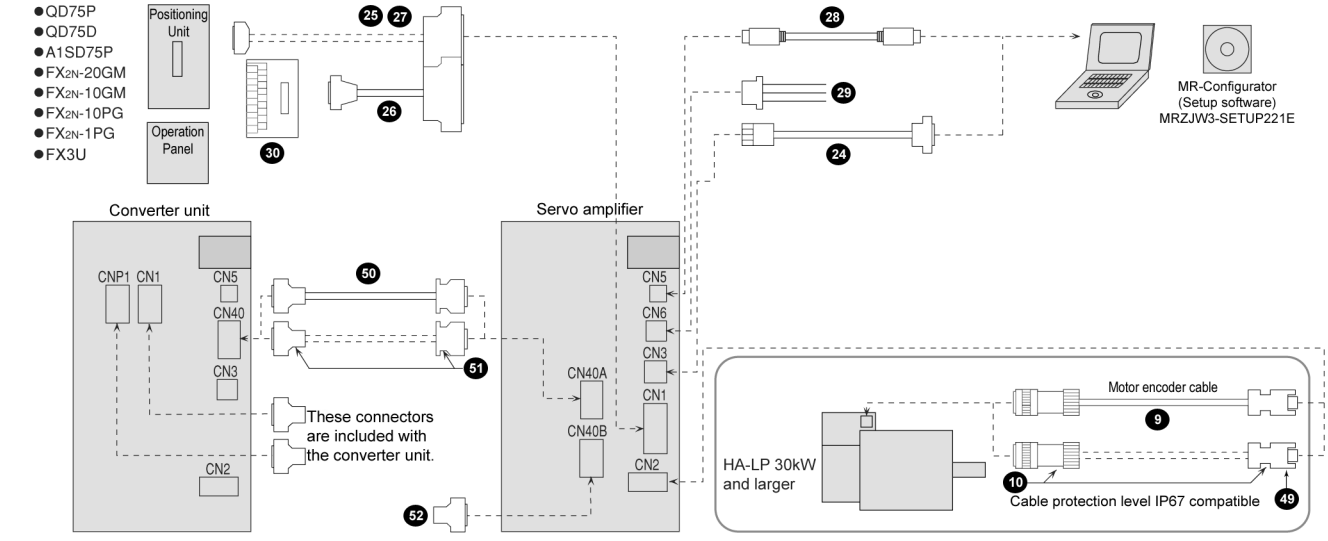


HA-LP Series up to 22kW, Excluding HA-LP502, HA-LP702



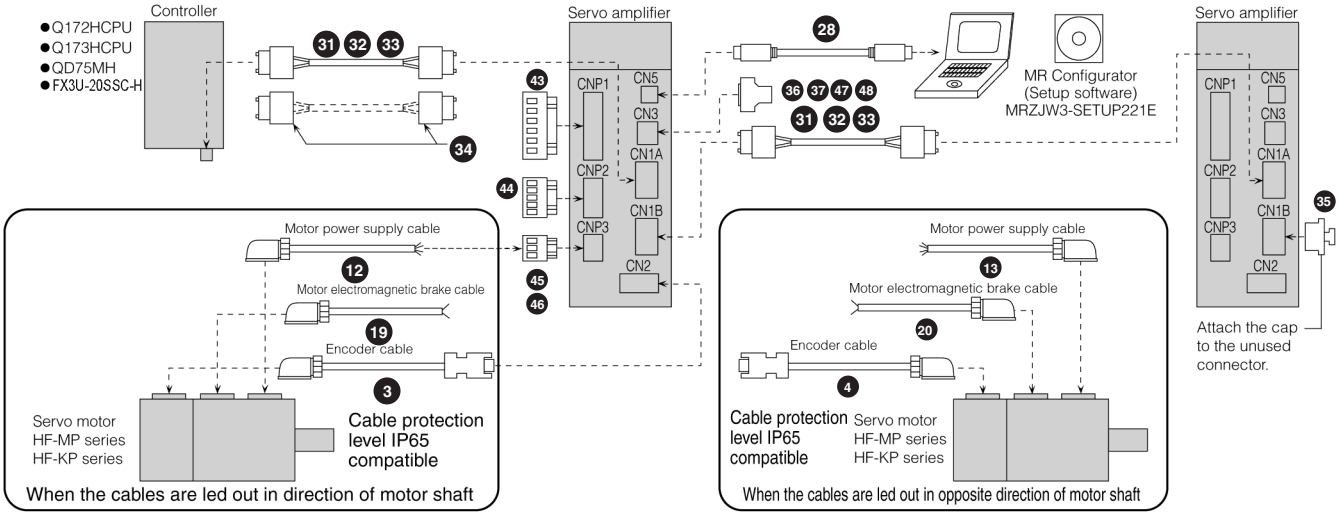
1. Only select models of the HA-LP series motors have the brake available, please refer to the motor specifications for model types.

HA-LP Series 30kW and larger

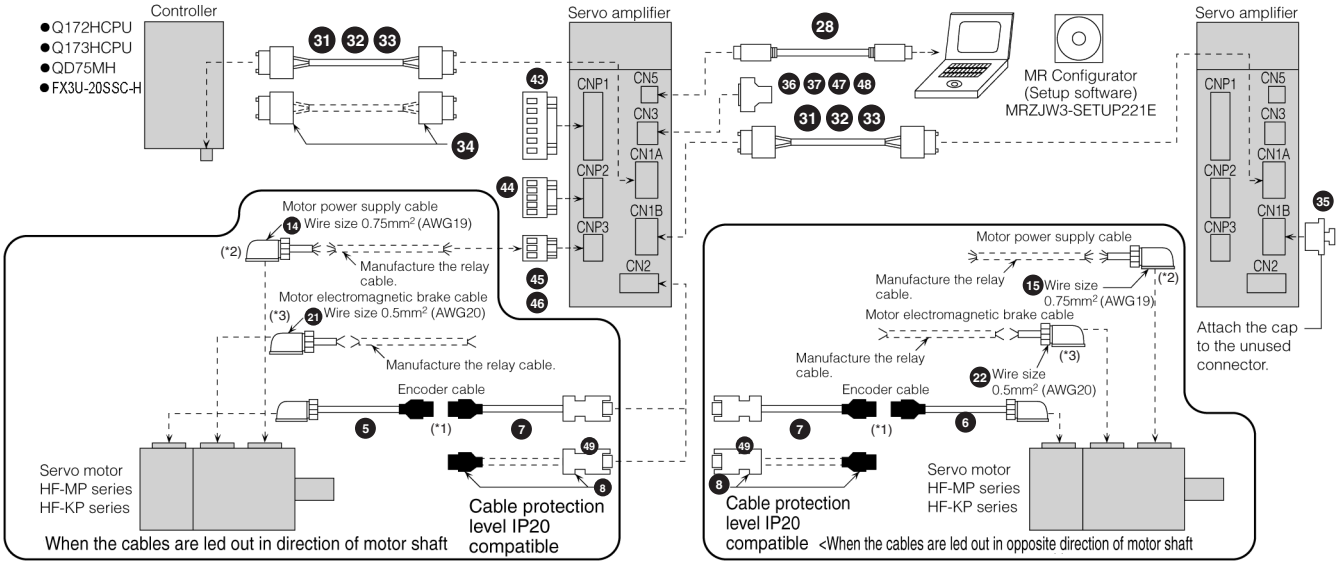


MR-J3-B Cables and Connectors (B-Type)

HF-MP/HF-KP Series: Encoder cable length 10m or shorter

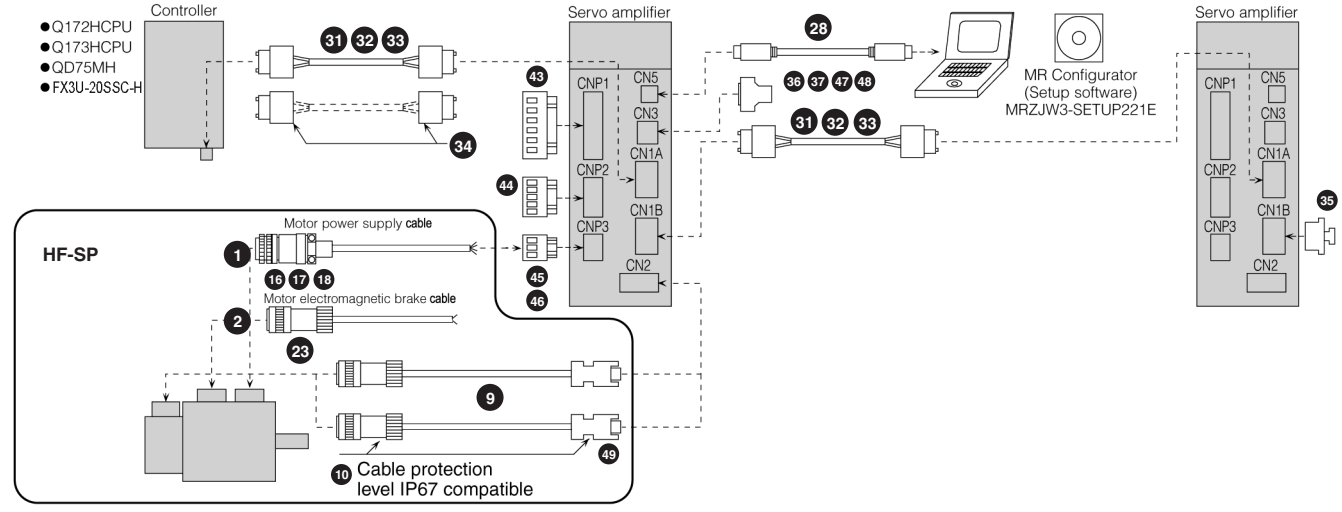


HF-MP/HF-KP Series: Encoder cable length over 10m



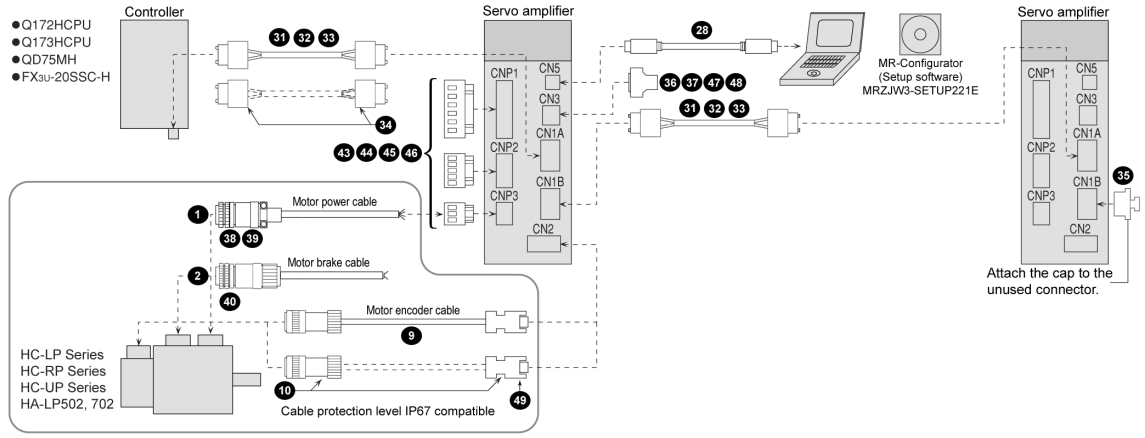
Notes: 1. This cable does not have a long bending life, please be sure to secure the cable before using.
2. If the length exceeds 10m, use the needed length extension cable (customer supplied) This cable does not have a long bending life, please be sure to secure the cable before using. Refer to the MR-J3-T Amplifier Instruction Manual for information on manufacturing the extension cable.
3. If the length exceeds 10m, use the needed length extension cable (customer supplied) in junction with the MR-BKS2CBL03M-A1-L/-A2-L. This cable does not have a long bending life, please be sure to secure the cable before using. Refer to the MR-J3-T Amplifier Instruction Manual for information on manufacturing the extension cable.

HF-SP Series

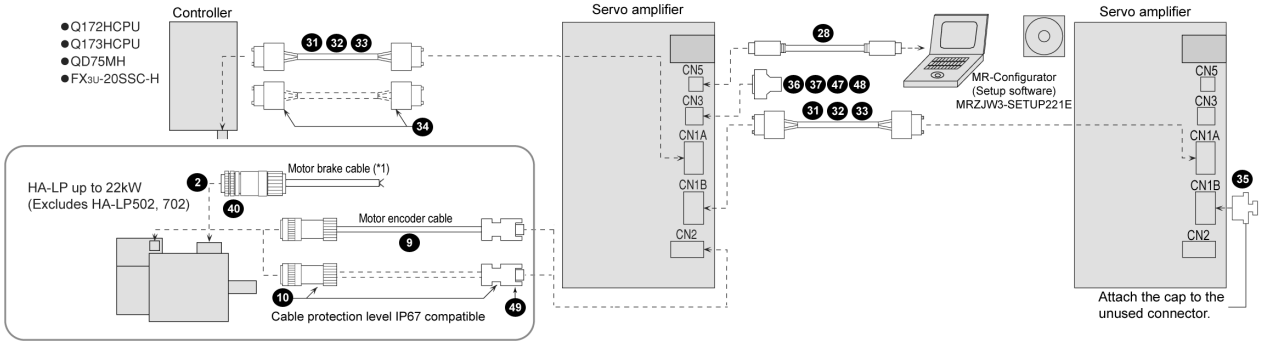


MR-J3-B Cables and Connectors (B-Type & RJ006)

HC-LP, HC-RP, HC-UP Series, HA-LP502, HA-LP702

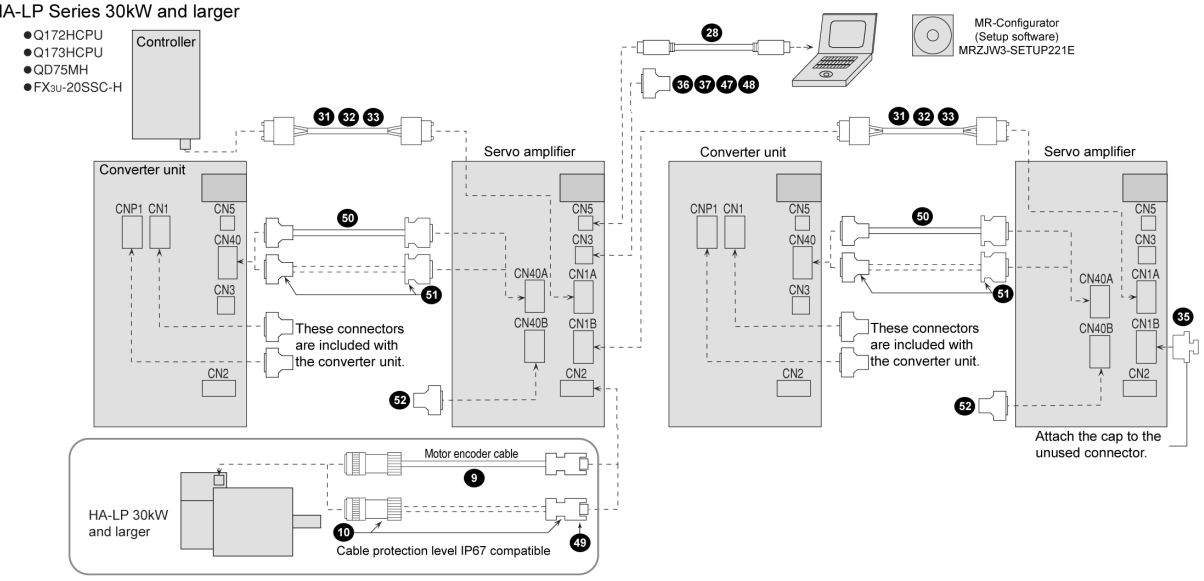


HA-LP Series up to 22kW, Excluding HA-LP502, HA-LP702



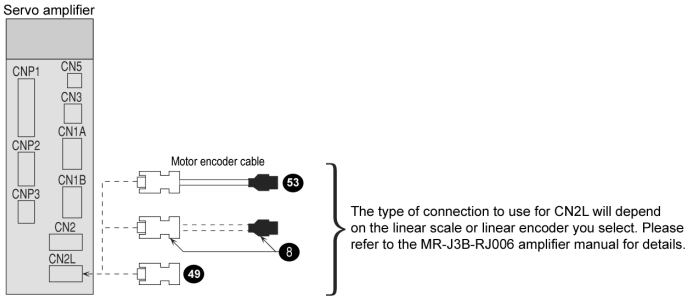
1. Only select models of the HA-LP series motors have the brake available, please refer to the motor specifications for model types.

HA-LP Series 30kW and larger



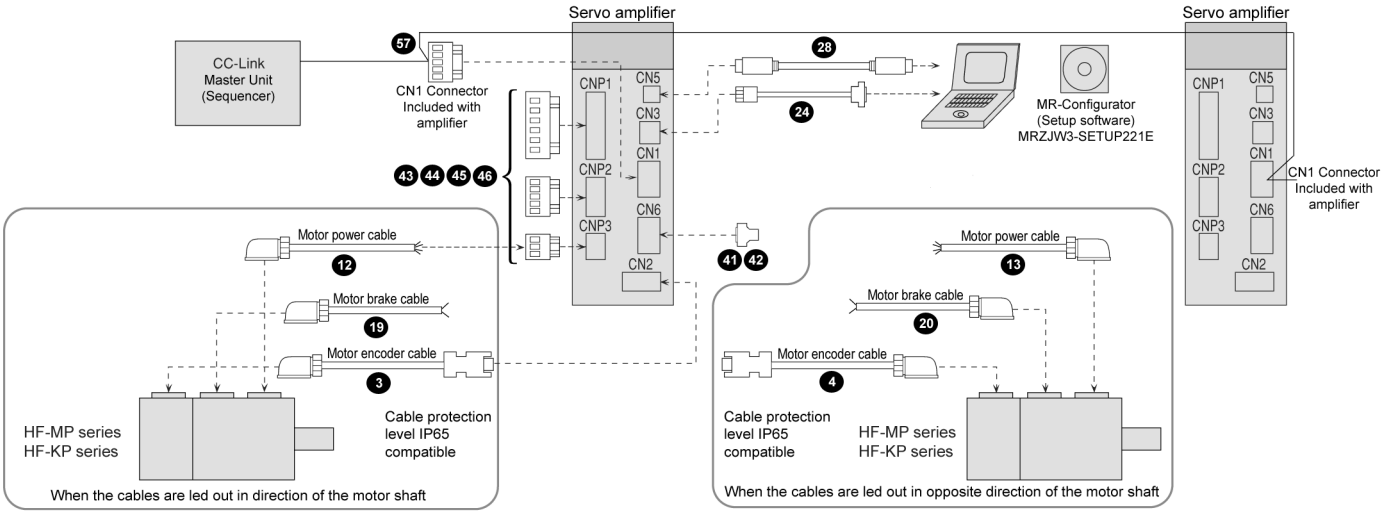
MR-J3-B-RJ006 Fully Closed Loop Series

This connector drawing refers to the extra connector on the MR-J3-B-RJ006 amplifier all other connectors are the same as the MR-J3-B standard type amplifier.

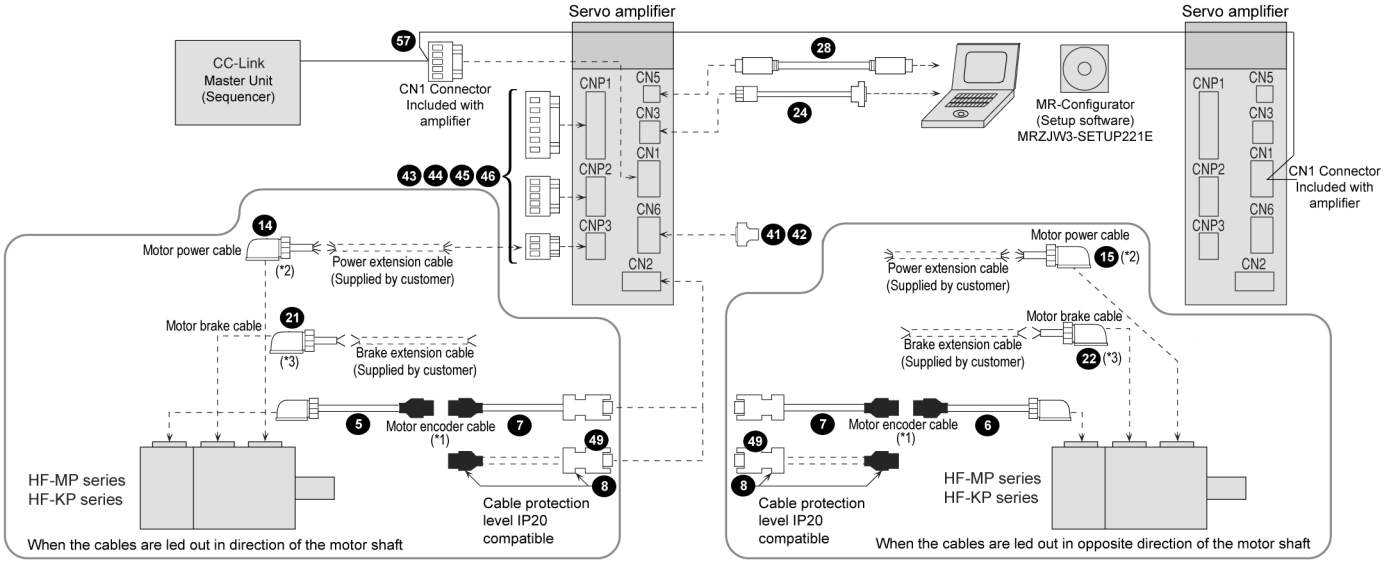


MR-J3-T Cables and Connectors (T-Type)

HF-MP/HF-KP Series: Encoder cable length 10m or shorter

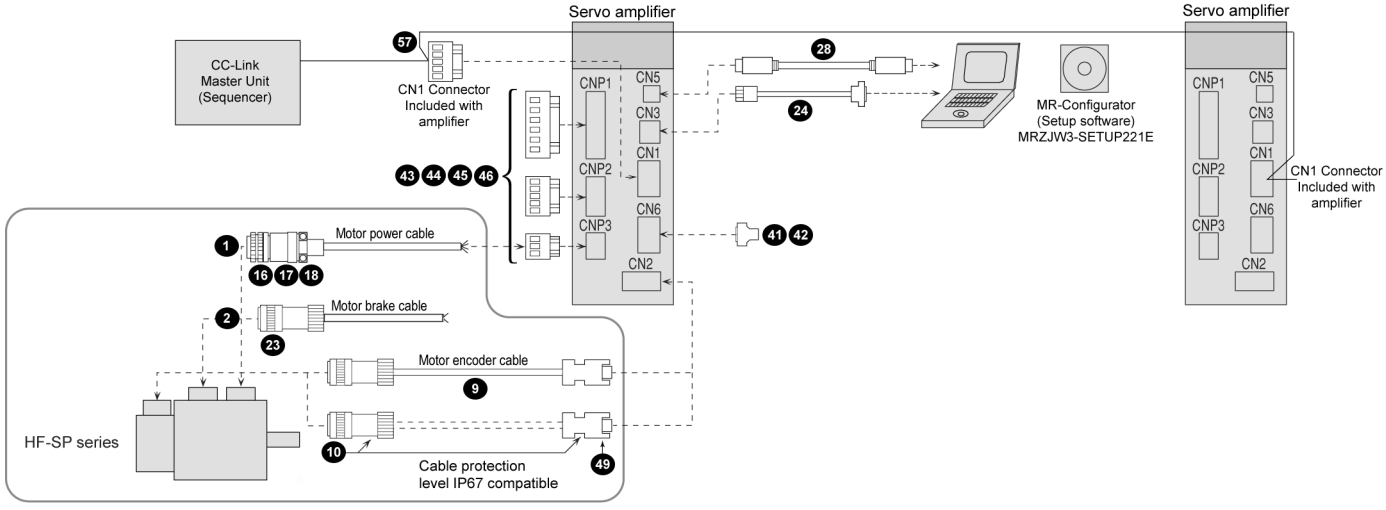


HF-MP/HF-KP Series: Encoder cable length over 10m



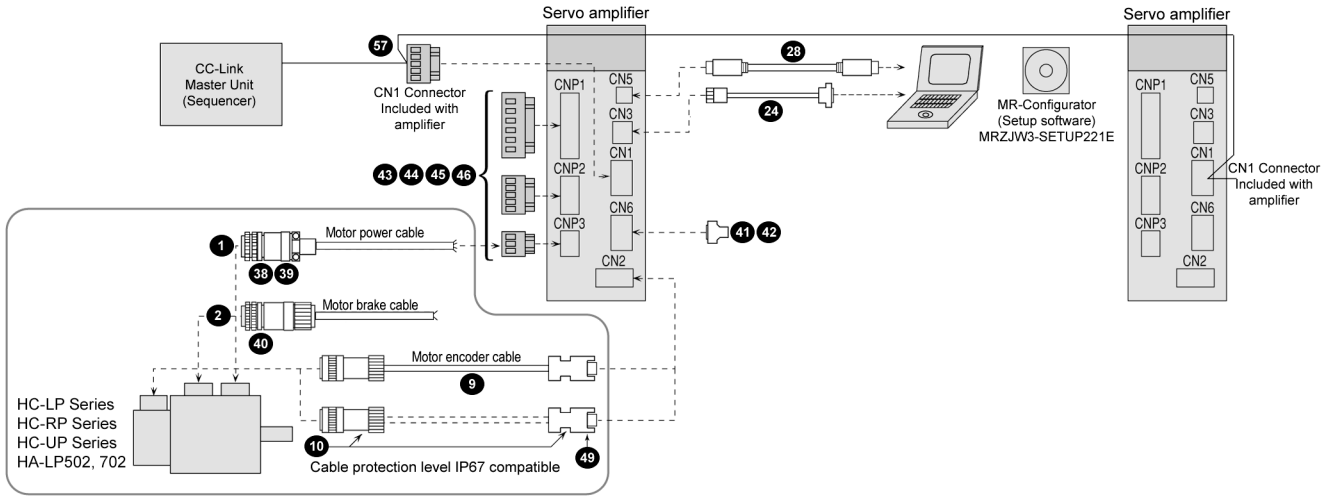
1. This cable does not have a long bending life, please be sure to secure the cable before using.
2. If the length exceeds 10m, use the needed length extension cable (customer supplied) in junction with the MR-PWS2CBL03M-A1-L/-A2-L. This cable does not have a long bending life, please be sure to secure the cable before using. Refer to the MR-J3-T Amplifier Instruction Manual for information on manufacturing the extension cable.
3. If the length exceeds 10m, use the needed length extension cable (customer supplied) in junction with the MR-BKS2CBL03M-A1-L/-A2-L. This cable does not have a long bending life, please be sure to secure the cable before using. Refer to the MR-J3-T Amplifier Instruction Manual for information on manufacturing the extension cable.

HF-SP Series

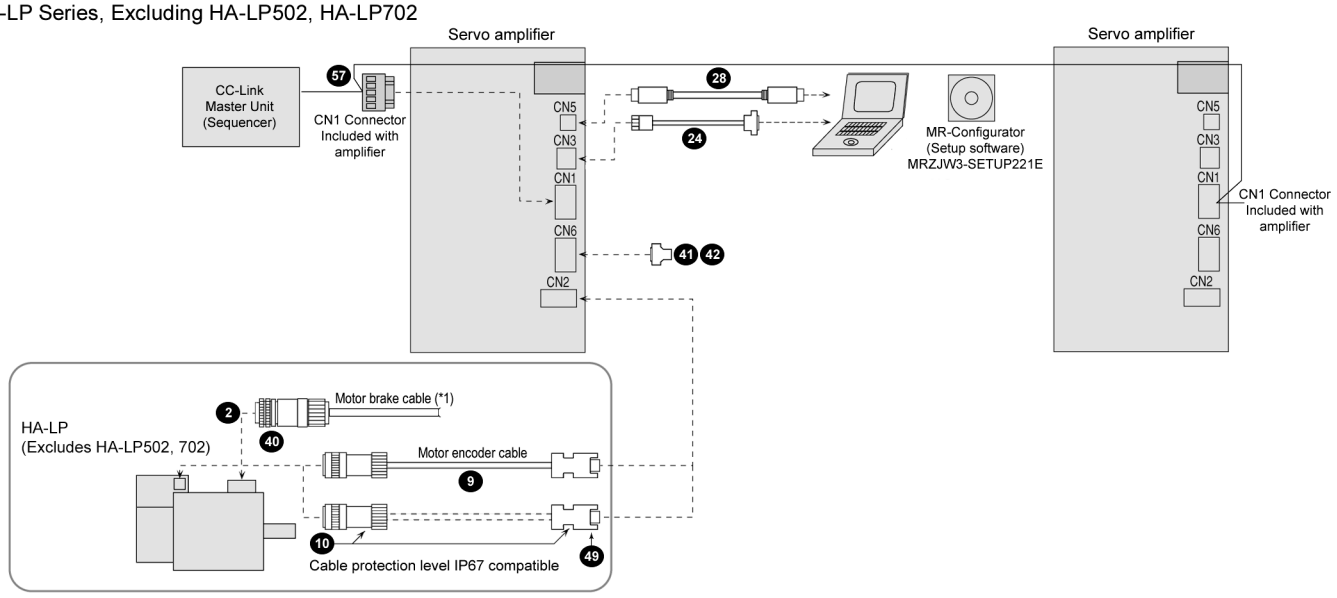


MR-J3-T Cables and Connectors (T-Type)

HC-LP, HC-RP, HC-UP Series, HA-LP502, HA-LP702

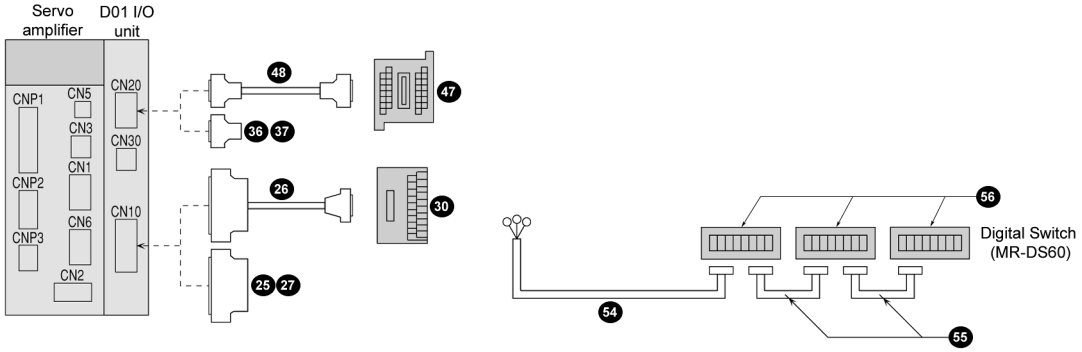


HA-LP Series, Excluding HA-LP502, HA-LP702

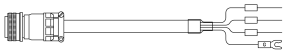
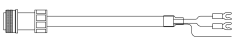


1. Only select models of the HA-LP series motors have the brake available, please refer to the motor specifications for model types.

MR-J3-D01 optional expansion I/O module with a MR-J3-T

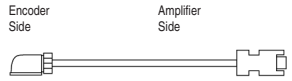
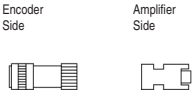


MR-J3 Cables and Connectors (Refer to Charts on Previous Pages)

Item			Motor Model Number	Cable Number (☐ = cable length 2, 5, 10, 15, 20, 25, 30 meter)	Stocked Lengths	Protection Level	Description
Power Cables for HA-LP, HC-LP, HC-RP, HC-UP and HF-SP Series Motors - A-, B- & T-Type Amplifiers	❶	Standard-Flex, Unshielded Type Cables (Straight Type Connector Only)	HA-LP502	MR-J3HC5S-☐M	2M, 5M, 10M, 20M, 30M	IP65	
			HA-LP702	MR-J3P7-☐M			
			HA-LP ALL OTHERS	Hard Wired By Customer	N/A	N/A	
			HC-LP52	MR-J3HC1S-☐M	2M, 5M, 10M, 20M, 30M	IP65	
			HC-LP52B	MR-J3HC1SB-☐M			
			HC-LP102~152	MR-J3HC2S-☐M			
			HC-LP102B~152B	MR-J3HC2SB-☐M			
			HC-LP202(B) (*1)	MR-J3HC4S-☐M			
			HC-LP302(B) (*1)	MR-J3HC5S-☐M			
			HC-RP103~153	MR-J3HC2S-☐M	2M, 5M, 10M, 20M, 30M	IP65	
			HC-RP103B~153B	MR-J3HC2SB-☐M			
			HC-RP203	MR-J3HC3S-☐M			
			HC-RP203B	MR-J3HC3SB-☐M			
			HC-RP353~503	MR-J3HC5S-☐M			
			HC-RP353B~503B	MR-J3HC5SB-☐M			
			HC-UP72	MR-J3HC1S-☐M	2M, 5M, 10M, 20M, 30M	IP65	
			HC-UP72B	MR-J3HC1SB-☐M			
			HC-UP152	MR-J3HC2S-☐M			
			HC-UP152B	MR-J3HC2SB-☐M			
			HC-UP202(B) (*1)	MR-J3HC4S-☐M			
			HC-UP352(B)~502(B) (*1)	MR-J3HC5S-☐M			
			HF-SP51(B)~HF-SP52(4)(B) (*1)	MR-J3P1-☐M	2M, 5M, 10M, 20M, 30M	IP65	
			HF-SP81(B)~HF-SP102(4)(B) (*1)	MR-J3P2-☐M			
			HF-SP121(B)~HF-SP202(4)(B) (*1)	MR-J3P4-☐M			
			HF-SP152(4)(B) (*1)	MR-J3P3-☐M			
			HF-SP301(B)~HF-SP352(4)(B) (*1)	MR-J3P5-☐M			
			HF-SP502(4)(B) (*1)	MR-J3P6-☐M			
			HF-SP421(B), HF-SP702(4)(B) (*1)	MR-J3P7-☐M			
		High-Flex, Shielded Type Cables (Straight type connector only)	HA-LP502	MR-J3HC5S-SH-☐M	—	IP65	
			HA-LP702	MR-J3PWS7-☐M			
			HA-LP ALL OTHERS	Hard Wired By Customer	N/A	N/A	
			HC-LP52	MR-J3HC1S-SH-☐M	—	IP65	
			HC-LP52B	MR-J3HC1SB-SH-☐M			
			HC-LP102~152	MR-J3HC2S-SH-☐M			
			HC-LP102B~152B	MR-J3HC2SB-SH-☐M			
			HC-LP202(B) (*1)	MR-J3HC4S-SH-☐M			
			HC-LP302(B) (*1)	MR-J3HC5S-SH-☐M			
			HC-RP103~153	MR-J3HC2S-SH-☐M	—	IP65	
			HC-RP103B~153B	MR-J3HC2SB-SH-☐M			
			HC-RP203	MR-J3HC3S-SH-☐M			
			HC-RP203B	MR-J3HC3SB-SH-☐M			
			HC-RP353~503	MR-J3HC5S-SH-☐M			
			HC-RP353B~503B	MR-J3HC5SB-SH-☐M			
			HC-UP72	MR-J3HC1S-SH-☐M	—	IP65	
			HC-UP72B	MR-J3HC1SB-SH-☐M			
			HC-UP152	MR-J3HC2S-SH-☐M			
			HC-UP152B	MR-J3HC2SB-SH-☐M			
			HC-UP202(B) (*1)	MR-J3HC4S-SH-☐M			
			HC-UP352(B)~502(B) (*1)	MR-J3HC5S-SH-☐M			
			HF-SP51(B)~HF-SP52(4)(B) (*1)	MR-J3PWS1-☐M	—	IP67	
			HF-SP81(B)~HF-SP102(4)(B) (*1)	MR-J3PWS2-☐M			
			HF-SP121(B)~HF-SP202(4)(B) (*1)	MR-J3PWS4-☐M			
			HF-SP152(4)(B) (*1)	MR-J3PWS3-☐M			
			HF-SP301(B)~HF-SP352(4)(B) (*1)	MR-J3PWS5-☐M			
			HF-SP502(4)(B) (*1)	MR-J3PWS6-☐M			
			HF-SP421(B), HF-SP702(4)(B) (*1)	MR-J3PWS7-☐M			
Brake Cables - A-, B- & T-Types	❷	Standard-Flex, Unshielded Type Cables	HA-LP ALL (B) SIZES	MR-J3HCBKS-☐M	2M, 5M, 10M, 20M, 30M	IP65	
			HC-LP202B, 302B				
			HC-UP202B, 352B, 502B				
			HF-SP(4) ALL (B) SIZES	MR-J3BK-☐M	2M, 5M, 10M, 20M, 30M	IP67	
		High-Flex, Shielded Type Cables	HA-LP ALL (B) SIZES	MR-J3HCBKS-SH-☐M	—	IP65	
			HC-LP202B, 302B				
			HC-UP202B, 352B, 502B				
			HF-SP(4) ALL (B) SIZES	MR-J3BRKS1-☐M	—	IP67	

Notes:
1. Must order separate brake cable for these motors.

MR-J3 Cables and Connectors (Refer to Charts on Previous Pages)

Item				Model	Stocked Lengths	Protection Level	Description
Encoder Cable for CN2 – A-, B- and T-Type	❸	10m or Shorter (Direct Connection Type)	Encoder Cable For HF-MP/HF-KP Series Motor Lead Out In Direction Of Motor Shaft	MR-J3ENCBL□M-A1-H (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
				MR-J3ENCBL□M-A1-L (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
	❹		Encoder Cable For HF-MP/HF-KP Series Motor Lead Out In Opposite Direction Of Motor Shaft	MR-J3ENCBL□M-A2-H (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
				MR-J3ENCBL□M-A2-L (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
	❺	Exceeding 10m (Relay Type)	Encoder Cable For HF-MP/HF-KP Series Motor Lead Out In Direction Of Motor Shaft	MR-J3JCBL03M-A1-L (Cable length 0.3m) (*1)	S	IP20	
	❻		Encoder Cable For HF-MP/HF-KP Series Motor Lead Out In Opposite Direction Of Motor Shaft	MR-J3JCBL03M-A2-L (Cable length 0.3m) (*1)	S	IP20	
	❼		Amplifier-Side Cable For HF-MP/HF-KP Series Motor	MR-EKCBL□M-H (□ = cable length 20, 30, 40, 50m) (*1)	20, 30	IP20	Use this in combination of 5 or 6.
				MR-EKCBL□M-L (□ = cable length 20, 30m) (*1)	–	IP20	
	❽		Junction Connector, Amplifier-Side Connector (*2) For HF-MP/HF-KP Series Motor	MR-ECNM	S	IP20	
	❾	Encoder Cable For HF-SP, HC-RP, HC-UP, HC-LP, HA-LP Series Motor		MR-J3ENSCBL□M-H (□ = cable length 2, 5, 10, 20, 30, 40, 50m) (*1)	2, 5, 10, 20, 30	IP67	
				MR-J3ENSCBL□M-L (□ = cable length 2, 5, 10, 20, 30m) (*1)	–	IP67	
	❿	Encoder Connector Set For HF-SP, HC-RP, HC-UP, HC-LP, HA-LP Series Motor		MR-J3SCNS	S	IP67	
	⓫	Battery Connection Relay Cable		MR-J3BTCBL03M (Cable length 0.3m) (*3)	S	—	
Motor Power Supply Cables For CNP3 – A-, B- and T-Type	⓬	10m Or Shorter (Direct Connection Type	Power Supply Cable For HF-MP/ HF-KP Series Motor. Lead Out In Direction Of Motor Shaft	MR-PWS1CBL□M-A1-H (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
				MR-PWS1CBL□M-A1-L (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
	⓭		Power Supply Cable For HF-MP/ HF-KP Series Motor. Lead Out In Opposite Direction of Motor Shaft	MR-PWS1CBL□M-A2-H (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
				MR-PWS1CBL□M-A2-L (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
	⓮	Exceeding 10m (Relay Type)	Power Supply Cable For HF-MP/HF-KP Series Motor Lead Out In Direction Of Motor Shaft	MR-PWS2CBL03M-A1-L (Cable length 0.3m) (*1)	S	IP55	
	⓯		Power Supply Cable For HF-MP/HF-KP Series Motor Lead Out In Opposite Direction Of Motor Shaft	MR-PWS2CBL03M-A2-L (Cable length 0.3m) (*1)	S	IP55	

Notes:
See page 152.

MR-J3 Cables and Connectors

Item				Model	Stocked Lengths	Protection Level	Description
Power Supply Connectors For HF-SP Motors	⑯	Power Supply Connector For HF-SP51, 81, HF-SP52, 102, 152 Motor See ❶ For Cable		MR-PWCNS4 (Straight type only)	S	IP67	
	⑰	Power Supply Connector For HF-SP121, 201, HF-SP202, 352, 502 Motor See ❶ For Cable		MR-PWCNS5 (Straight type only)	S	IP67	
	⑱	Power Supply Connector For HF-SP702 See ❶ For Cable		MR-PWCNS3 (Straight type only)	S	IP67	
Motor Brake Cables – A-, B- and T-Type	⑲	10m Or Shorter (Direct Connection Type)	Brake Cable For HF-MP/ HF-KP Series Motor Lead Out In Direction Of Motor Shaft	MR-BKS1CBL□M-A1-H (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
				MR-BKS1CBL□M-A1-L (□ = cable length 2, 5, 10m) (*1)	–	IP65	
	⑳		Brake Cable For HF-MP/ HF-KP Series Motor Lead Out In Opposite Direction Of Motor Shaft	MR-BKS1CBL□M-A2-H (□ = cable length 2, 5, 10m) (*1)	2, 5, 10	IP65	
				MR-BKS1CBL□M-A2-L (□ = cable length 2, 5, 10m) (*1)	–	IP65	
	㉑	Exceeding 10m (Relay Type)	Brake Cable For HF-MP/ HF-KP Series Motor Lead Out In Direction Of Motor Shaft	MR-BKS2CBL03M-A1-L (Cable length 0.3m) (*1)	S	IP55	
	㉒		Brake Cable For HF-MP/ HF-KP Series Motor Lead Out In Opposite Direction Of Motor Shaft	MR-BKS2CBL03M-A2-L (Cable length 0.3m) (*1)	S	IP55	
Brake Connector For HF-SP Series Motor	㉓	Brake Connector For HF-SP Series Motor See ❷ For Cable		MR-BKCNS1 (Straight type only)	S	IP67	
For CN3 A- and T-Type Only	㉔	RS-232 to RS-485 Converter PC to CN3 Cable (3 Meter)		SC-FRPC	S	—	
For CN1 – A- and T-D01 Types Only	㉕	CN1 Connector (50 Pin)		MR-J3CN1	–	—	
	㉖	Junction Terminal Block Cable		MR-J2M-CN1TBL□M (□ = cable length 0.5, 1m) (For use with MR-TB50 and MR-TB50MIN Junction Terminal Block)	0.5, 1	—	
For CN1 - A- and T-D01 Types Only	㉗	CN1 Pigtail Cable (50 Pin)		MR-J3CCN1CBL-□M (□ = cable length 3, 5m)	3, 5	—	
For CN5 A-, B- & T-Types	㉘	Personal Computer Communication Cable	USB Cable	MR-J3USBCBL3M (Cable length 3m)	S	—	
For CN6 A-Type Only	㉙	Monitor Cable		MR-J3CN6CBL1M (Cable length 1m)	S	—	
A-Type Only	㉚	Junction Terminal Block		MR-TB50MIN (reduced size – width = 145mm (5.71 in))	S	—	
				MR-TB50 (standard size – width = 244mm (9.61 in))	S		

Notes:
See next page.

MR-J3 Cables and Connectors

Item			Model	Stocked Lengths	Protection Level	Description
For Controller, CN1A, CN1B B-Type Only	31	SSCNET III Cable (Standard Cord For Inside Panel)	MR-J3BUS□M (□ = cable length 0.15, 0.3, 0.5, 1, 3m)	0.15, 0.3, 0.5, 1, 3	—	
	32	SSCNET III Cable (Standard Cable For Outside Panel)	MR-J3BUS□M-A (□ = cable length 5, 10, 20m)	5, 10, 20	—	
	33	SSCNET III Cable (Long Distance Cable)	MR-J3BUS□M-B (□ = cable length 30, 40, 50m)	30	—	
For CN1B B-Type Only	35	Connector Cap for SSCNET III	Connector comes with amplifier standard	–	—	
For CN3 B- and T-D01 Types Only	36	CN20 or CN3 Signal Connector (20 Pin)	MR-J2CN1	S	—	
For CN3 B- and T-D01 Types Only	37	CN20 or CN3 Pigtail Cable (20 Pin)	MR-CCN1CBL-□M (□ = cable length 3, 5m)	3, 5	—	
For A-, B- and T-Types	38	Power Supply Connector For HC-RP to 203, HC-UP to 152, and HC-LP to 152	MR-PWCNS1	S	IP65	
	39	Power Supply Connector For HC-RP 353 and Up, HC-UP 202 and up, and HC-LP 202 and Up	MR-PWCNS2	S	IP65	
	40	Brake Connector For HC-RP, HC-UP, and HC-LP With Separate Brake Connector	MR-BKCN	S	IP65	
For T-Type Only	41	CN6 Connector (26 Pin)	MR-ECN1	S	—	
	42	CN6 Pigtail Cable (26 Pin)	MR-ECN1CBL-3M	S	—	
For A, B and T-Types (Comes with J3 Amp Standard)	43	CNP1 Connector 1kW or Less (200VAC)	54928-0670	S	—	
		CNP1 Connector 2kW – 3.5kW (200VAC)	PC4/6-STF-7.62	S	—	
		CNP1 Connector 2kW or Less (400VAC)	721-207/026-000	S	—	
	44	CNP2 Connector up to 3.5kW (200VAC)	54927-0510	S	—	
		CNP2 Connector 2kW or Less (400VAC)	721-205/026-000	S	—	
	45	CNP3 Connector 1kW or Less (200VAC)	54928-0370	S	—	
		CNP3 Connector 2kW – 3.5kW (200VAC)	PC4/3-STF-7.62	S	—	
		CNP3 Connector 2kW or Less (400VAC)	721-203/026-000	S	—	
	46	CNP1-2-3 Insertion Tool (200VAC)	54932-0000	S	—	
		CNP1-2-3 Insertion Tool (400VAC)	231-131	S	—	
For B-Type and D01 Only	47	20 Pin Terminal B Lock For J3-B (TB20 Cannot be Used)	PS7DW-20V14B-F	S	—	
	48	Cable for PS7DW-20V14B-F Terminal Block	MR-J2HBUS□M (□ = Cable length 05, 1, 3, 5m)	0.5, 1, 3, 5	—	
For A, B, & T-Type	49	CN2 or CN2L Connector	MR-J3CN2	S	IP20	
For A & B Types	50	CN40 to CN40A Cable Between Converter and Amp	MR-J3CDL05M	–	—	
	51	CN40 to CN40A Connector Set	MR-J2CN1-A	–	—	
	52	CN40B Connector	MR-J3-TM	–	—	
For B-RJ006 Type Only	53	CN2L Cable	MR-EKCBL□M-H (□ = cable length 2, 5, 10m)	2, 5, 10	IP20	
For MR- J3-D01 Types	54	MR-J3-D01 Terminal Block to MR-DS60 Cable	MR-DSCBL□M-G (□ = cable length 3, 5, 10m)	–	—	
	55	MR-DS60 to MR-DS60 Cable	MR-DSCBL□ (□ = cable length 25, 100cm)	–	—	
	56	Digital Switch to Use Together With the MR-J3-D01	MR-DS60	–	—	
For T-Type Only	57	CN1 CC-Link Replacement Connector	1781014	–	—	

Notes:

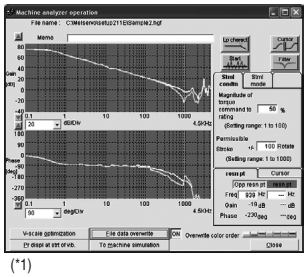
1. -H and -L indicate bending life. -H indicates a long bending life, and -L indicates a standard.
2. Refer to "MR-J3-B SERVO AMPLIFIER INSTRUCTION MANUAL" for details on manufacturing the cable.
3. The battery connection junction cable (MR-J3BTCB L03M) has a diode built-in. Do not manufacture this cable. This optional cable must be used.

Ⓔ Software and Manuals

MR Configurator • (MRZJW3-SETUP221E)

This software makes it easy to perform setup, tuning, monitor display, diagnostics, reading and writing of parameters, and test operations with a personal computer. User-satisfying functions that enable the balance with the machine system, optimum control and short start up time are available.

1. This software can set up and tune your servo system easily with a personal computer.
2. Multiple monitor functions
   Graphic display functions are provided to display the servo motor status with the input signal triggers, such as the command pulse, droop pulse and speed.
3. Test operations with a personal computer. Test operation of the servo motors can be performed with a personal computer using multiple test mode menus.
4. Further advanced tuning is possible with the improved advanced functions.



(*1)

Description	Model Number	Stocked Item
Windows Communication Software	MR-CONFIGURATOR	S
Communication Cable	MR-J3USBCBL3M	S

Manuals

Hardware Description	Model Number	Stocked Item
MR-J3-A Instruction Manual	SH(NA)030038	S
MR-J3-B Instruction Manual	SH(NA)030051	S
MR-J3-T Instruction Manual	SH(NA)030058	S
MR-J3-T / MR-J3-D01 Instruction Manual	SH(NA)030061	S
Servo Motor Manual Volume 2	SH(NA)030041	S

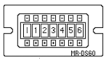
Note: Many of these manuals are available for free download from our website, www.meau.com

Ⓕ System Options

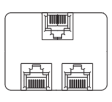
Extension I/O Unit

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-T Only	MR-J3-D01	S	

I/O Digital Switch

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-D01 Only	MR-DS60	–	

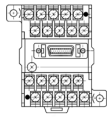
RS-422 Distributor (For Multidrop)

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-A/B/T	BMJ-8	S	

Manual Pulse Generator

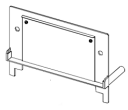
Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-T Only	MR-HDP01	S	

20 Pin Terminal Block (*1)

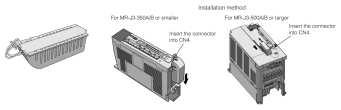
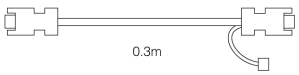
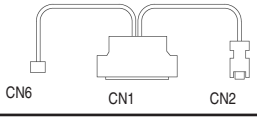
Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-B Only	PS7DW-20V14B-F	S	

Note: MR-TB20 terminal block cannot be used for MR-J3-B.

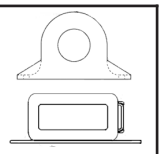
Heat Sink Mounting Attachment

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-11K to 22KA/B/T Only	MR-J3ACN	–	

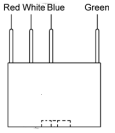
Battery

Item Number	Model Number	Description	Stk Item	Description
Battery	MR-J3BAT	The servo motor's absolute value can be maintained by installing the battery in the servo amplifier. The battery is not required when the servo system is used in an incremental mode.	S	
Battery Connection Relay Cable	MR-J3BTCBL03M	Use this relay cable to hold the absolute value when shipping the product with the machine and servo amplifier removed. The servo motor HF series does not have a super capacitor (for holding an absolute value for short time) in the encoder. When this optional cable is used, the absolute value can be held even when the encoder cable is disconnected from the servo amplifier, making it easy to do maintenance on the servo amplifier.	S	
Diagnostic Cable Only For MR-J3-A Type	MR-J3ACHECK	This cable is required when using the amplifier diagnostic function of MR Configurator (Setup software).	S	

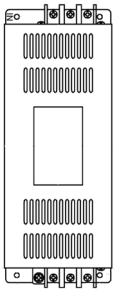
Line Noise Filter

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-200A/B/T(4) or smaller	FR-BSF01	S	
MR-J3-350A/B/T(4) or larger	FR-BLF	S	

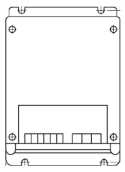
Line Noise Filter

Servo Amplifier Type	Model Number	Stocked Item	
All 200VAC J3 Models	FR-BIF	S	
All 400VAC J3 Models	FR-BIF-H	–	

EMC Filter

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-100A/B/T and less	HF3010A-UN	S	
MR-J3-200A/B/T ~ 350A/B/T	HF3030A-UN	S	
MR-J3-500A/B/T ~ 700A/B/T	HF3040A-UN	S	
MR-J3-11KA/B/T ~ 22KA/B/T	HF3100A-UN	S	
MR-J3-DU30 ~ 37KA/B	HF3200A-UN	–	
MR-J3-100A4/B4/T4 and less	TF3005C-TX	–	
MR-J3-200 ~ 700A4/B4/T4	TF3020C-TX	–	
MR-J3-11KA4/B4/T4	TF3030C-TX	–	
MR-J3-15KA4/B4/T4	TF3040C-TX	–	
MR-J3-22KA4/B4/T4	TF3060C-TX	–	
MR-J3-DU30 ~ 55KA4/B4	TF3150C-TX	–	

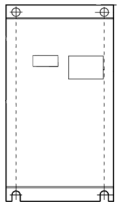
External Dynamic Brake

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-11KA/B/T	DBU-11K	–	
MR-J3-15KA/B/T	DBU-15K	–	
MR-J3-22KA/B/T	DBU-22K	–	
MR-J3-11KA4/B4/T4	DBU-11K-4	–	
MR-J3-15K ~ 22KA4/B4/T4	DBU-22K-4	S	
MR-J3-DU30KB ~ DU37KB	DBU-37K	–	
MR-J3-DU30KB4 ~ DU55KB4	DBU-55K-4	–	

Brake/Resistor Units (Must be used in conjunction with each other)

Servo Amplifier Model	Brake Unit Model Number	Stk Item	Resistor Unit Model Number	Stk Item
MR-J3-500A/B/T to 700A/B/T	FR-BU2-15K	S	FR-BR-15K-UL	S
MR-J3-11KA/B/T to 15KA/B/T	FR-BU2-30K	S	FR-BR-30K-UL	S
MR-J3-22KA/B/T	FR-BU2-55K	–	FR-BR-55K-UL	–
MR-J3-500 ~ 700A4/B4/T4	FR-BU2-H15K	S	FR-BR-H15K-UL	S
MR-J3-11K ~ 15KA4/B4/T4	FR-BU2-H30K	S	FR-BR-H30K-UL	S
MR-J3-22KA4/B4/T4	FR-BU2-H55K	–	FR-BR-H55K-UL	S

Power Regeneration Converter

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-500A/B/T	FR-RC-15K	–	
MR-J3-700A/B/T ~ 15KA/B/T	FR-RC-30K	–	
MR-J3-22KA/B/T	FR-RC-55K	–	
MR-J3-500A4/B4/T4	FR-RC-H15K	–	
MR-J3-700 ~ 15KA4/B4/T4	FR-RC-H30K	–	
MR-J3-22KA4/B4/T4	FR-RC-H55K	–	

Power Regeneration Common Converter/Stand-Alone Reactor

(Must be used in conjunction with each other).
Up to six servo amplifiers can be connected to one FR-CV, refer to manuals for details.

Servo Amplifier Model	Common Converter Model Number	Stk Item	Reactor Model Number	Stk Item
MR-J3-350A/B/T	FR-CV-7.5K	–	FR-CVL-7.5K	–
MR-J3-500A/B/T	FR-CV-11K	–	FR-CVL-11K	–
MR-J3-700A/B/T	FR-CV-15K	–	FR-CVL-15K	–
MR-J3-11KA/B/T	FR-CV-22K	–	FR-CVL-22K	–
MR-J3-15KA/B/T	FR-CV-30K	–	FR-CVL-30K	–
	FR-CV-37K	–	FR-CVL-37K	–
MR-J3-22KA/B/T	FR-CV-55K	–	FR-CVL-55K	–

200VAC Optional Regeneration Resistors

Servo Amplifier Model (MR-J3-)	Built-in Regenerative Resistor/ Tolerable Regenerative Power (W)	Standard Resistors Supplied with Amplifiers			Optional Regeneration Resistors/Tolerable Regenerative Power (W)											
		GRZG400-			MR-RB											
		1.5ΩX4 (*2)	0.9ΩX5 (*2)	1.5ΩX5 (*2)	032 (40Ω)	12 (40Ω)	30 (13Ω)	31 (6.7Ω)	32 (40Ω)	50 (13Ω) (*1)	51 (6.7Ω)(*1)	5E (6Ω)(*2)	9P (4.5Ω)(*2)	9F (3Ω)(*2)	139 (1.3Ω)	137 (1.3Ω)(*3)
Stocked Item	–	–	–	–	S	S	S	–	S	S	S	–	–	–	–	–
10A(1)/ B(1)/T(1)	–	–	–	–	30	–	–	–	–	–	–	–	–	–	–	–
20A(1)/B(1)/ T(1)	10	–	–	–	30	100	–	–	–	–	–	–	–	–	–	–
40A(1)/B(1)/ T(1)	10	–	–	–	30	100	–	–	–	–	–	–	–	–	–	–
60A/B/T	10	–	–	–	30	100	–	–	–	–	–	–	–	–	–	–
70A/B/T	20	–	–	–	30	100	–	–	300	–	–	–	–	–	–	–
100A/B/T	20	–	–	–	30	100	–	–	300	–	–	–	–	–	–	–
200A/B/T	100	–	–	–	–	–	300	–	–	500	–	–	–	–	–	–
350A/B/T	100	–	–	–	–	–	300	–	–	500	–	–	–	–	–	–
500A/B/T	130	–	–	–	–	–	–	300	–	–	500	–	–	–	–	–
700A/B/T	170	–	–	–	–	–	–	300	–	–	500	–	–	–	–	–
11KA/B/T	–	500 (800)	–	–	–	–	–	–	–	–	–	500 (800)	–	–	–	–
15KA/B/T	–	–	850 (1300)	–	–	–	–	–	–	–	–	–	850 (1300)	–	–	–
22KA/B/T	–	–	–	850 (1300)	–	–	–	–	–	–	–	–	–	850 (1300)	–	–
DU30KA/B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1300	3900
DU37KA/B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1300	3900

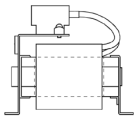
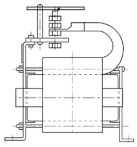
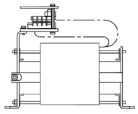
400VAC Optional Regeneration Resistors

Servo Amplifier Model (MR-J3-)	Built-in Regenerative Resistor/ Tolerable Regenerative Power (W)	Standard Resistors Supplied with Amplifiers			Optional Regeneration Resistors/Tolerable Regenerative Power (W)										
		GRZG400-			MR-RB										
		5ΩX4 (*2)	2.5ΩX5 (*2)	2ΩX5 (*2)	1H-4 (82Ω)	3M-4 (120Ω)	3G-4 (47Ω)	34-4 (26Ω)	5G-4 (47Ω) (*1)	54-4 (26Ω)(*1)	6B-4 (20Ω)(*2)	60-4 (12.5Ω)(*2)	6K-4 (10Ω)(*2)	136-4 (5Ω)	138-4 (5Ω) (*4)
Stocked Item	–	–	–	–	–	S	S	S	S	S	S	–	–	–	–
60A4/B4/T4	15	–	–	–	100	300	–	–	–	–	–	–	–	–	–
100A4/B4/T4	15	–	–	–	100	300	–	–	–	–	–	–	–	–	–
200A4/B4/T4	100	–	–	–	–	–	300	–	500	–	–	–	–	–	–
350A4/B4/T4	100	–	–	–	–	–	300	–	500	–	–	–	–	–	–
500A4/B4/T4	130	–	–	–	–	–	–	300	–	500	–	–	–	–	–
700A4/B4/T4	170	–	–	–	–	–	–	300	–	500	–	–	–	–	–
11KA4/B4/T4	–	500 (800)	–	–	–	–	–	–	–	–	500 (800)	–	–	–	–
15KA4/B4/T4	–	–	850 (1300)	–	–	–	–	–	–	–	–	850 (1300)	–	–	–
22KA4/B4/T4	–	–	–	850 (1300)	–	–	–	–	–	–	–	–	850 (1300)	–	–
DU30KA4/B4	–	–	–	–	–	–	–	–	–	–	–	–	–	1300	3900
DU37KA4/B4	–	–	–	–	–	–	–	–	–	–	–	–	–	1300	3900
DU45KA4/B4	–	–	–	–	–	–	–	–	–	–	–	–	–	1300	3900
DU55KA4/B4	–	–	–	–	–	–	–	–	–	–	–	–	–	1300	3900

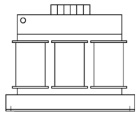
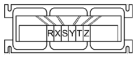
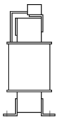
Notes:

1. Be sure to install cooling fans.
2. This applies when the GRZG400-□Ω regeneration resistors are used as a standard accessory and parameter PA02 is changed with cooling fan (1.0m³/min, the □92 x 2 unit) installed.
3. MR-RB137 is three resistance values combined.
4. MR-RB138-4 is three resistance values combined.

DC Power Improvement Reactor

Servo Amplifier Type	Model Number	Stk Item	
MR-J3-10 ~ 20A/B/T	DCA000402	–	
MR-J3-40A/B/T	DCA000902	–	
MR-J3-60 ~ 70A/B/T			
MR-J3-100A/B/T	DCA001202	–	
MR-J3-200A/B/T	DCA001802	–	
MR-J3-350A/B/T	DCA003202	–	
MR-J3-500A/B/T	DCA005001	–	
MR-J3-60A4/B4/T4	DCA000402	–	
MR-J3-100A4/B4/T4	DCA000903	–	
MR-J3-200A4/B4/T4			
MR-J3-350A4/B4/T4	DCA001803	–	
MR-J3-500A4/B4/T4	DCA002503	–	
MR-J3-700 ~ 11KA/B/T	DCA008002	–	
MR-J3-15KA/B/T	DCA011003	–	
MR-J3-22KA/B/T	DCA012502	–	
MR-J3-700 ~ 11KA4/B4/T4	DCA003202	–	
MR-J3-15KA4/B4/T4	DCA005004	–	
MR-J3-22KA4/B4/T4	DCA008005	–	
MR-J3-DU30KA/B	MR-DCL30K	–	
MR-J3-DU37KA/B	MR-DCL37K	–	
MR-J3-DU30KA4/B4	MR-DCL30K-4	–	
MR-J3-DU37KA4/B4	MR-DCL37K-4	–	
MR-J3-DU45KA4/B4	MR-DCL45K-4	–	
MR-J3-DU55KA4/B4	MR-DCL55K-4	–	

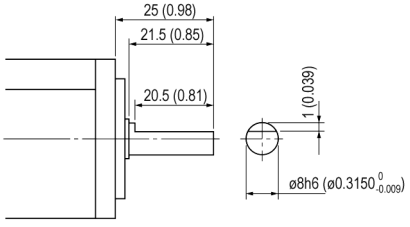
AC Power Factor Improvement Reactor

Servo Amplifier Type	Model Number	Stk Item	
MR-J3-10A1/B1/T1	MRL-00204	–	
MR-J3-10 ~ 20A/B/T			
MR-J3-20A1/B1/T1	MRL-00401	–	
MR-J3-40A/B/T			
MR-J3-40A1/B1/T1	MRL-00801	–	
MR-J3-60 ~ 70A/B/T			
MR-J3-100A/B/T	MRL-01201	–	
MR-J3-200A/B/T	MRL-01801	S	
MR-J3-350A/B/T	MRL-03501	–	
MR-J3-500A/B/T	MRL-04501	–	
MR-J3-700 ~ 11KA/B/T	MRL-05501	–	
MR-J3-15KA/B/T	MRL-08001	–	
MR-J3-22KA/B/T	MRL-10001	–	
MR-J3-60A4/B4/T4	MRL-00402	S	
MR-J3-100A4/B4/T4			
MR-J3-200A4/B4/T4	MRL-00802	S	
MR-J3-350A4/B4/T4	MRL-01802	S	
MR-J3-500A4/B4/T4	MRL-02502	S	
MR-J3-700 ~ 11KA4/B4/T4	MRL-03502	S	
MR-J3-15KA4/B4/T4	MRL-04502	S	
MR-J3-22KA4/B4/T4	MRL-05502	–	

MR-J3 Motor Shaft Details and Servomotor Dimensions

HF-KP / HF-MP Series

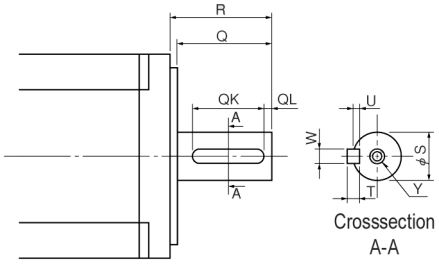
D-Cut Shaft (50W & 100W Motors Only)



Unit: mm (inch)

Keyway With Key Included

Motor Model	Capacity (W)	Variable Dimensions								
		T	S	R	Q	W	QK	QL	U	Y
HF-KP_K HF-MP_K	200, 400	5 (0.20)	14h6 (0.554)	30 (1.18)	27 (1.06)	5 (0.20)	20 (0.79)	3 (0.12)	3 (0.12)	M4 Depth 15 (0.59)
	750	6 (0.24)	19h6 (0.7480)	40 (1.57)	37 (1.46)	6 (0.24)	25 (0.98)	5 (0.20)	3.5 (0.14)	M5 Depth 20 (0.79)



Unit: mm (inch)

Keyway With No Key Supplied
(Customer must supply key or order key part separately below)

Motor Model	Capacity (kW)	Variable Dimensions mm (in)									Fig.	Key Dimensions	Key Model Number	Stocked Item
		S	R	Q	W	QK	QL	U	r	Y				
HF-SP_K HC-LP_K	0.5~1.5	24h6 (0.9449 $^{0}_{-0.0005}$)	55 (2.17)	50 (1.91)	8 $^{0}_{-0.036}$ (0.315 $^{0}_{-0.001}$)	36 (1.42)	5 (0.20)	4 $^{+0.2}_{0}$ (0.16 $^{+0.008}_{0}$)	4 (0.16)	M8 Depth 20 (0.79)	A	8x7x28	MTR KEY 8-7-28	S
	2.0~7.0	35h6 $^{+0.01}_{0}$ (1.3780 $^{+0.0004}_{0}$)	79 (3.11)	75 (2.95)	10 $^{0}_{-0.036}$ (0.394 $^{0}_{-0.001}$)	55 (2.17)	5 (0.20)	5 $^{+0.2}_{0}$ (0.20 $^{+0.008}_{0}$)	5 (0.20)			10x8x45	MTR KEY 10-8-45	S
HC-RP_K	1.0, 1.5, 2.0	24h6 (0.9449 $^{0}_{-0.0005}$)	45 (1.77)	40 (1.57)	8 $^{0}_{-0.036}$ (0.315 $^{0}_{-0.001}$)	25 (0.98)	5 (0.20)	4 $^{+0.2}_{0}$ (0.16 $^{+0.008}_{0}$)	4 (0.16)			8x7x16	MTR KEY 8-7-16	S
	3.5, 5.0	28h6 (1.1024 $^{0}_{-0.0005}$)	63 (2.48)	58 (2.28)	8 $^{0}_{-0.036}$ (0.315 $^{0}_{-0.001}$)	53 (2.09)	3 (0.12)	4 $^{+0.2}_{0}$ (0.16 $^{+0.008}_{0}$)	4 (0.16)			8x7x45	MTR KEY 8-7-45	S
HC-UP_K	0.75	22h6 (0.8661 $^{0}_{-0.0005}$)	55 (2.17)	50 (1.97)	6 $^{0}_{-0.036}$ (0.236 $^{0}_{-0.001}$)	42 (1.65)	3 (0.12)	3.5 $^{+0.2}_{0}$ (0.14 $^{+0.008}_{0}$)	3 (0.12)			6x6x36	MTR KEY 6-6-36	S
	1.5	28h6 (1.1024 $^{0}_{-0.0005}$)	55 (2.17)	50 (1.97)	8 $^{0}_{-0.036}$ (0.315 $^{0}_{-0.001}$)	53 (2.09)	3 (0.12)	4 $^{+0.2}_{0}$ (0.16 $^{+0.008}_{0}$)	4 (0.16)			8x7x36	MTR KEY 8-7-36	S
	2.0, 3.5, 5.0	35 $^{0}_{-0.036}$ (1.3780 $^{+0.0004}_{0}$)	65 (2.56)	60 (2.36)	10 $^{0}_{-0.036}$ (0.394 $^{0}_{-0.001}$)	50 (1.97)	5 (0.20)	5 $^{+0.2}_{0}$ (0.20 $^{+0.008}_{0}$)	5 (0.20)			10x8x45	MTR KEY 10-8-45	S

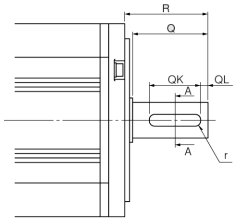
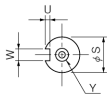


Figure A



Crosssection
A-A

Keyway With No Key Supplied
(Customer must supply key)

Motor Model (HA-LP_K)	Variable Dimensions mm (in)									Fig.	Key Model Number
	S	R	Q	W	QK	QL	U	r	Y		
601, 6014, 701M, 701M4, 502, 702, 11K2, 11K24	42h6 (1.6535 $^{0}_{-0.0006}$)	85 (3.35)	80 (3.15)	12 $^{0}_{-0.04}$ (0.47 $^{0}_{-0.002}$)	70 (2.76)	5 (0.20)	5 $^{+0.2}_{0}$ (0.2 $^{+0.008}_{0}$)	6 (0.24)	Same as Standard motor's straight shaft.	A	(N/A) Key to be supplied by customer.
801, 12K1, 8014, 12K14, 11K1M, 15K1M, 11K1M4, 15K1M4, 15K2, 22K2, 15K24, 22K24	55m6 (2.1654 $^{+0.0012}_{+0.0006}$)	110 (4.33)	100 (3.94)	16 $^{0}_{-0.04}$ (0.63 $^{0}_{-0.002}$)	90 (3.54)	5 (0.20)	6 $^{+0.2}_{0}$ (0.24 $^{+0.008}_{0}$)	8 (0.31)		B	
15K1, 20K1, 15K14, 20K14, 22K1M, 30K1M, 22K1M4, 30K1M4, 30K2, 37K2, 30K24, 37K24	60m6 (2.3622 $^{+0.0012}_{+0.0006}$)	140 (5.51)	140 (5.51)	18 $^{0}_{-0.04}$ (0.71 $^{0}_{-0.002}$)	128 (5.04)	6 (0.24)	7 $^{+0.2}_{0}$ (0.28 $^{+0.008}_{0}$)	9 (0.35)			
25K1, 30K1, 25K14, 30K14, 37K1M, 37K1M4, 45K1M4, 45K24, 55K24	65m6 (2.5591 $^{+0.0012}_{+0.0006}$)	140 (5.51)	140 (5.51)	18 $^{0}_{-0.04}$ (0.71 $^{0}_{-0.002}$)	128 (5.04)	6 (0.24)	7 $^{+0.2}_{0}$ (0.28 $^{+0.008}_{0}$)	9 (0.35)			
37K1, 37K14, 50K1M4	80m6 (3.1496 $^{0}_{-0.0006}$)	170 (6.69)	170 (6.69)	22 $^{0}_{-0.04}$ (0.87 $^{0}_{-0.002}$)	147 (5.79)	11 (0.43)	9 $^{+0.2}_{0}$ (0.35 $^{+0.008}_{0}$)	11 (0.43)			

Note: Not all key sizes are available to order from MEAU. If a key part is not listed, customer must supply.

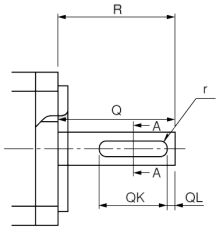
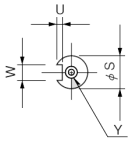


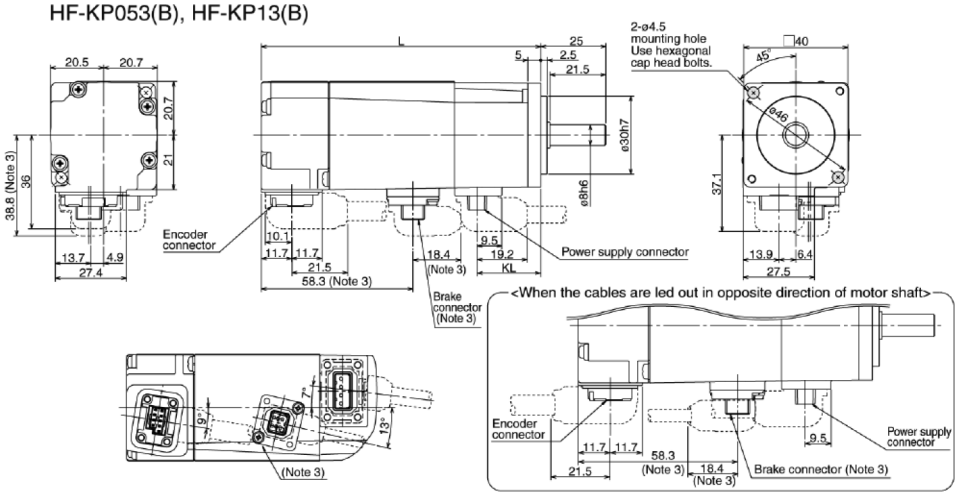
Figure B



Crosssection
A-A

HF-KP / HF-MP Series

HF-MP053(B), HF-MP13(B)
HF-KP053(B), HF-KP13(B)



Power supply connector pin assignment

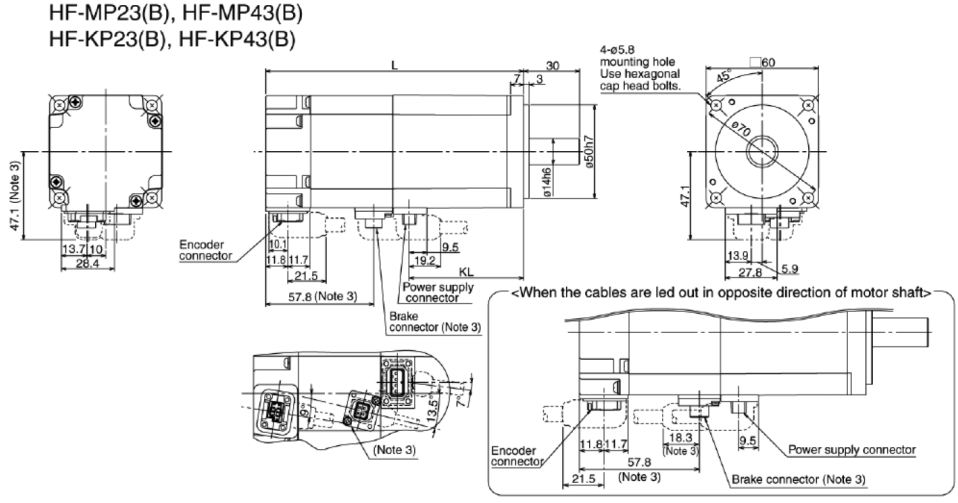
Pin No.	Signal name
1	Earth
2	U
3	V
4	W

Brake connector pin assignment (Note 3)

Pin No.	Signal name
1	B1
2	B2

Model	Variable dimensions	
	L	KL
HF-MP053 (B) HF-KP053 (B)	66.4 (107.5)	24.5
HF-MP13 (B) HF-KP13 (B)	82.4 (123.5)	40.5

HF-MP23(B), HF-MP43(B)
HF-KP23(B), HF-KP43(B)



Power supply connector pin assignment

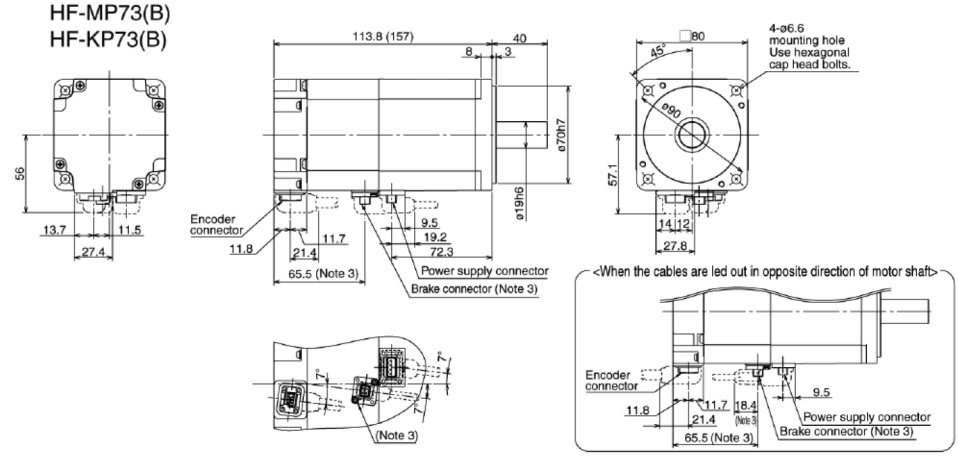
Pin No.	Signal name
1	Earth
2	U
3	V
4	W

Brake connector pin assignment (Note 3)

Pin No.	Signal name
1	B1
2	B2

Model	Variable dimensions	
	L	KL
HF-MP23 (B) HF-KP23 (B)	76.6 (116.1)	39.3
HF-MP43 (B) HF-KP43 (B)	98.5 (138)	61.2

HF-MP73(B)
HF-KP73(B)



Power supply connector pin assignment

Pin No.	Signal name
1	Earth
2	U
3	V
4	W

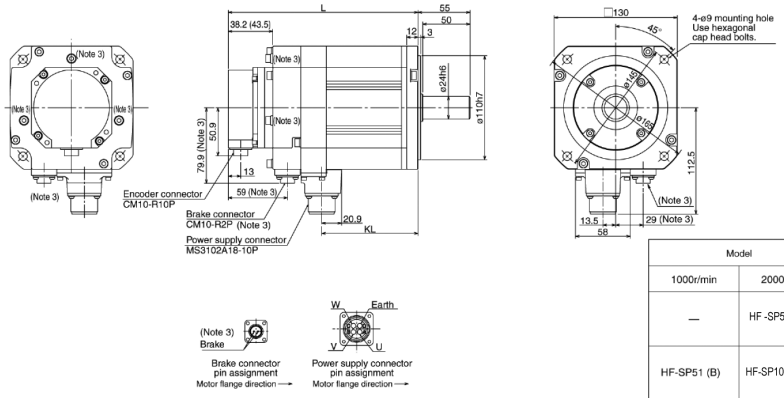
Brake connector pin assignment (Note 3)

Pin No.	Signal name
1	B1
2	B2

Notes:
1. Use a friction coupling to fasten a load.
2. Dimensions inside ( ) are for the models with an electromagnetic brake.
3. Only for the models with an electromagnetic brake. The electromagnetic brake terminals (B1,B2) do not have the polarity.
4. For dimensions where there is no tolerance listed, use general tolerance.
5. Dimensions for motors with an oil seal (HF-MP□J and HF-KP□J) are different from the above. Contact Mitsubishi for details.

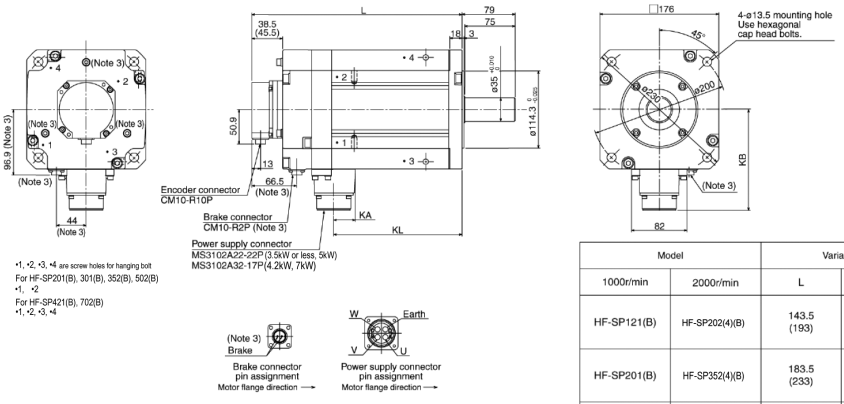
HF-SP Series

HF-SP51(B), HF-SP81(B)
HF-SP52(B) to HF-SP152(B)
HF-SP524(B) to HF-SP1524(B)



Model		Variable dimensions	
1000r/min	2000r/min	L	KL
—	HF -SP52(4)(B)	118.5 (153)	57.8
HF-SP51 (B)	HF-SP102(4)(B)	140.5 (175)	79.8
HF-SP81 (B)	HF-SP152(4)(B)	162.5 (197)	101.8

HF-SP121(B), HF-SP421(B)
HF-SP202(B) to HF-SP702(B), HF-SP2024(B), HF-SP3524(B)
HF-SP5024, HF-SP7024



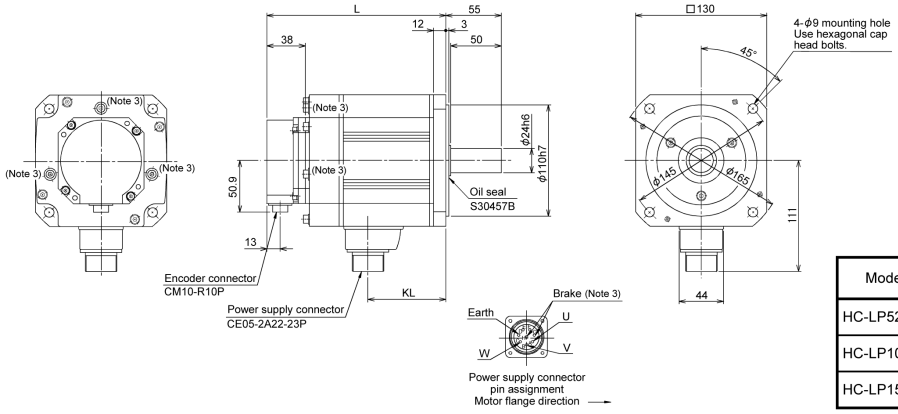
Model		Variable dimensions			
1000r/min	2000r/min	L	KL	KA	KB
HF-SP121(B)	HF-SP202(4)(B)	143.5 (193)	79.8	24.8	140.9
HF-SP201(B)	HF-SP352(4)(B)	183.5 (233)	119.8		
HF-SP301(4)(B)	HF-SP502(4)(B)	203.5 (253)	139.8		
HF-SP421(4)(B)	HF-SP702(4)(B)	263.5 (313)	191.8	32	149.1

Notes:
Use a friction coupling to fasten a load.
Dimensions inside ( ) are for the models with an electromagnetic brake.
Only for the models with an electromagnetic brake. The electromagnetic brake terminals do not have the polarity.
For dimensions where there is no tolerance listed, use general tolerance.

HC-LP Series

HC-LP52(B), HC-LP102(B), HC-LP152(B)

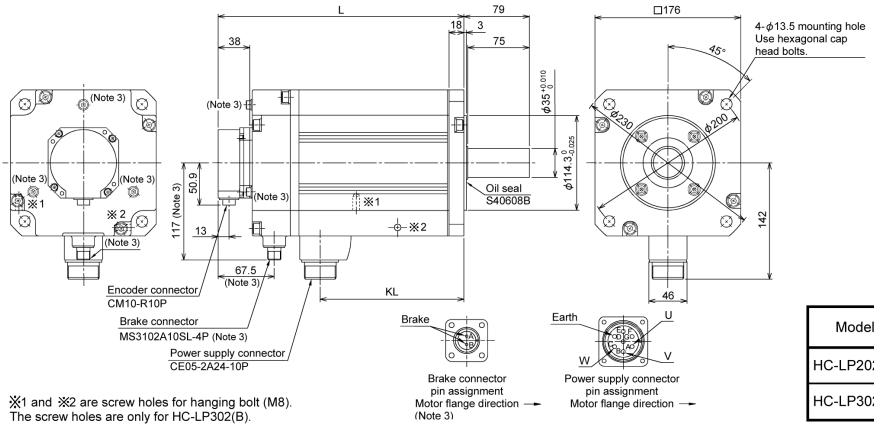
(Unit: mm)



Model	Variable dimensions	
	L	KL
HC-LP52(B)	144 (177)	77
HC-LP102(B)	164 (197)	97
HC-LP152(B)	191.5 (224.5)	124.5

Model	Brake static friction torque (N·m [oz·in])
HC-LP52B	8.5 (1200)
HC-LP102B	
HC-LP152B	

HC-LP202(B), HC-LP302(B)



※1 and ※2 are screw holes for hanging bolt (M8).
The screw holes are only for HC-LP302(B).

Model	Variable dimensions	
	L	KL
HC-LP202(B)	198.5 (246.5)	123.5
HC-LP302(B)	248.5 (296.5)	173.5

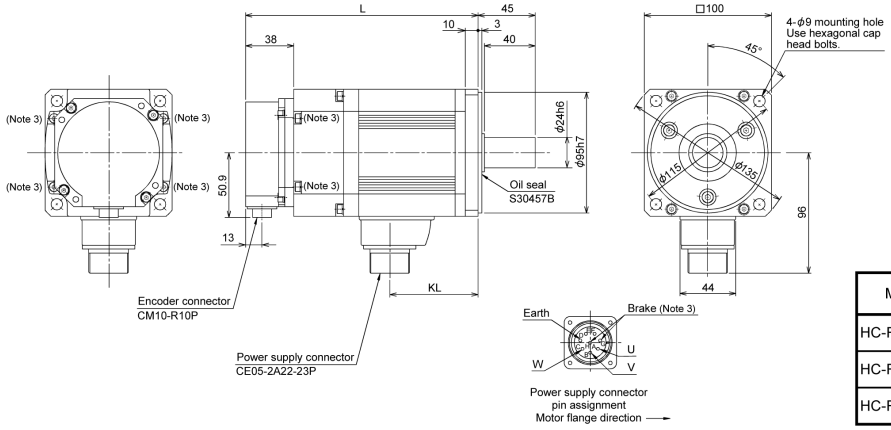
Model	Brake static friction torque (N·m [oz·in])
HC-LP202B	44 (6230)
HC-LP302B	

Notes: 1. Use a friction coupling to fasten a load.
2. Dimensions inside ( ) are for the models with an electromagnetic brake.
3. Only for the models with an electromagnetic brake.
The electromagnetic brake terminals do not have the polarity.
4. For dimensions where there is no tolerance listed, use general tolerance.

HC-RP Series

HC-RP103(B), HC-RP153(B), HC-RP203(B)

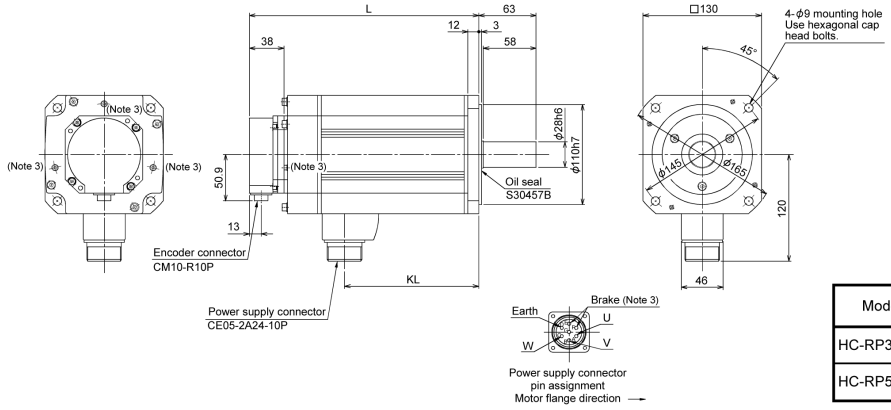
(Unit: mm)



Model	Variable dimensions	
	L	KL
HC-RP103(B)	145.5 (183.5)	69.5
HC-RP153(B)	170.5 (208.5)	94.5
HC-RP203(B)	195.5 (233.5)	119.5

Model	Brake static friction torque (N·m [oz·in])
HC-RP103B	7 (991)
HC-RP153B	
HC-RP203B	

HC-RP353(B), HC-RP503(B)



Model	Variable dimensions	
	L	KL
HC-RP353(B)	215.5 (252.5)	148
HC-RP503(B)	272.5 (309.5)	205

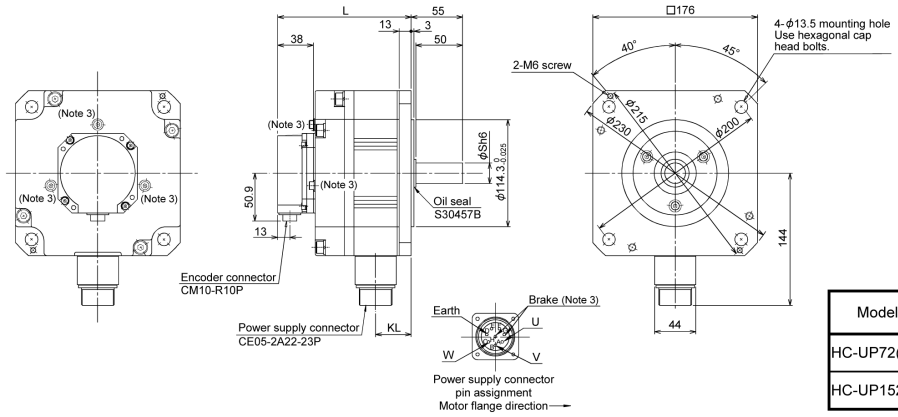
Model	Brake static friction torque (N·m [oz·in])
HC-RP353B	17 (2410)
HC-RP503B	

Notes: 1. Use a friction coupling to fasten a load.
2. Dimensions inside ( ) are for the models with an electromagnetic brake.
3. Only for the models with an electromagnetic brake.
The electromagnetic brake terminals do not have the polarity.
4. For dimensions where there is no tolerance listed, use general tolerance.

HC-UP Series

HC-UP72(B), HC-UP152(B)

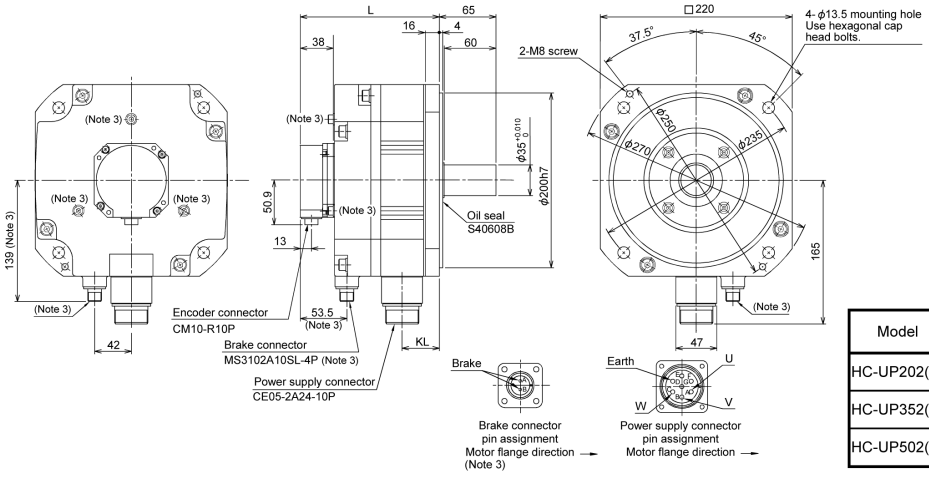
(Unit: mm)



Model	Variable dimensions		
	L	KL	S
HC-UP72(B)	109 (142.5)	38	22
HC-UP152(B)	118.5 (152)	47.5	28

Model	Brake static friction torque (N·m [oz·in])
HC-UP72B	8.5 (1200)
HC-UP152B	

HC-UP202(B), HC-UP352(B), HC-UP502(B)



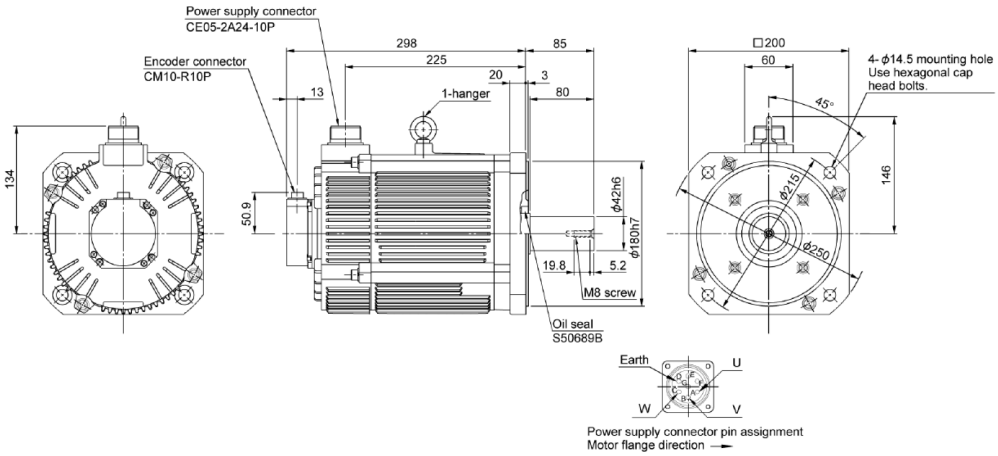
Model	Variable dimensions	
	L	KL
HC-UP202(B)	116.5 (159.5)	42.5
HC-UP352(B)	140.5 (183.5)	66.5
HC-UP502(B)	164.5 (207.5)	90.5

Model	Brake static friction torque (N·m [oz·in])
HC-UP202B	44 (6230)
HC-UP352B	
HC-UP502B	

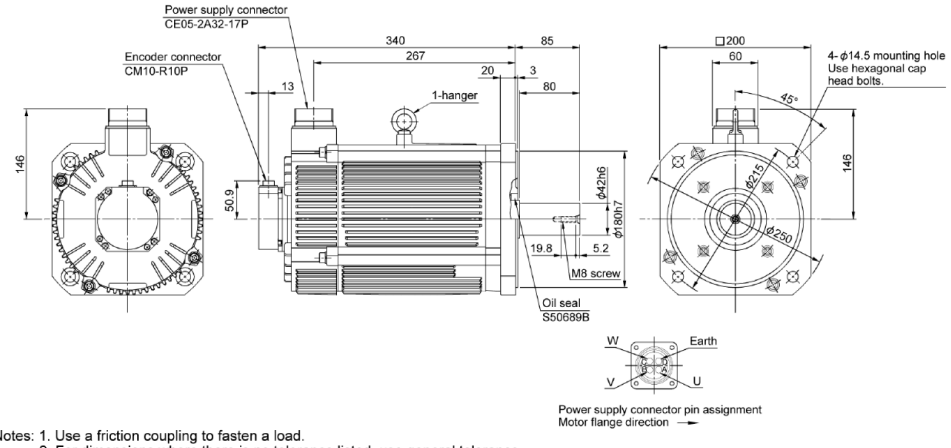
Notes: 1. Use a friction coupling to fasten a load.
2. Dimensions inside ( ) are for the models with an electromagnetic brake.
3. Only for the models with an electromagnetic brake.
The electromagnetic brake terminals do not have the polarity.
4. For dimensions where there is no tolerance listed, use general tolerance.

HA-LP Series

HA-LP502



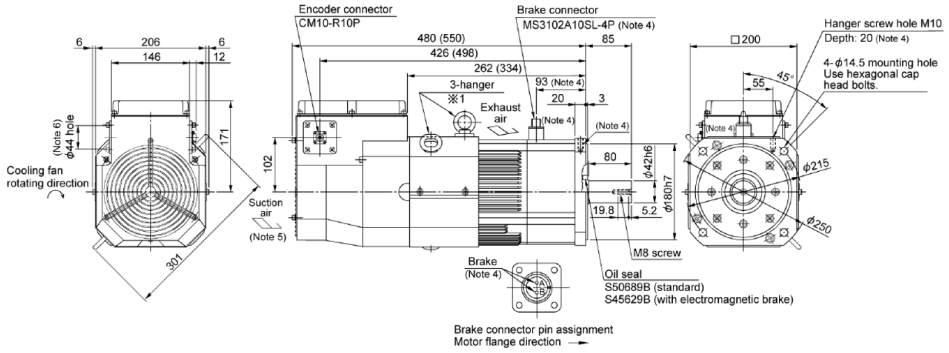
HA-LP702



Notes: 1. Use a friction coupling to fasten a load.
2. For dimensions where there is no tolerance listed, use general tolerance.
3. Dimensions inside ( ) are for the models with an electromagnetic brake.
4. Only for the models with an electromagnetic brake. The electromagnetic brake terminals do not have the polarity.
5. Leave a clearance of at least 100mm between the motor's suction side and wall.
6. Make sure that oil, water and dust, etc., will not enter the motor from the lead-in hole.

HA-LP601(B), HA-LP6014(B), HA-LP701M(B), HA-LP701M4(B), HA-LP11K2(B), HA-LP11K24(B)

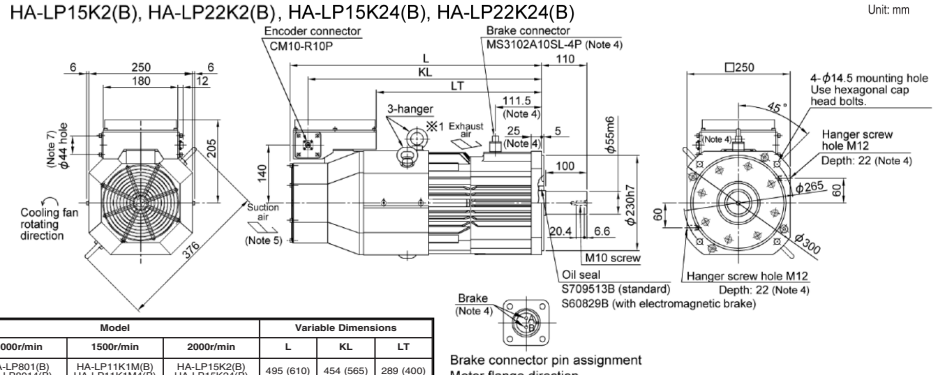
(Unit: mm)



Notes: 1. When the motor is used without a hanger, plug the thread hole with a bolt of M10×20 or shorter.
2. The terminal block on the terminal box housing consists of M6 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV) and for the thermal protector (OHS1, OHS2).

HA-LP801(B), HA-LP12K1(B), HA-LP8014(B), HA-LP12K14(B) HA-LP11K1M(B), HA-LP15K1M(B), HA-LP11K1M4(B), HA-LP15K1M4(B) HA-LP15K2(B), HA-LP22K2(B), HA-LP15K24(B), HA-LP22K24(B)

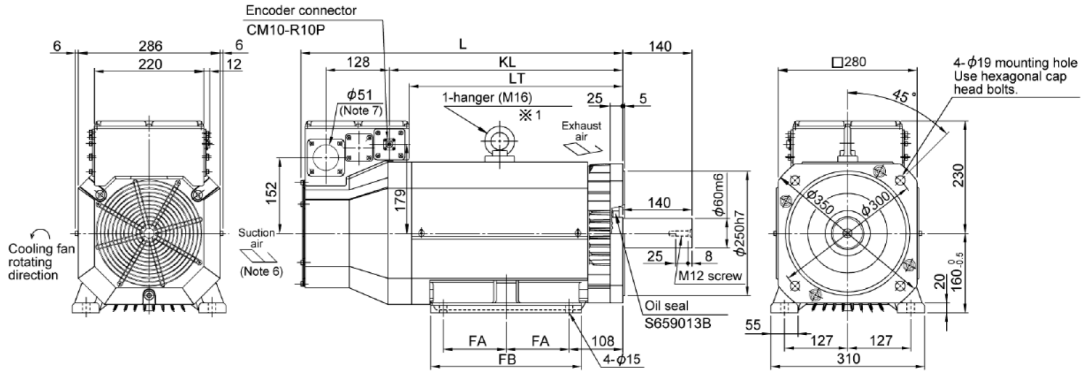
Unit: mm



Model			Variable Dimensions		
1000r/min	1500r/min	2000r/min	L	KL	LT
HA-LP801(B) HA-LP8014(B)	HA-LP11K1M(B) HA-LP11K1M4(B)	HA-LP15K2(B) HA-LP15K24(B)	495 (610)	454 (565)	289 (400)
HA-LP12K1(B) HA-LP12K14(B)	HA-LP15K1M(B) HA-LP15K1M4(B)	HA-LP22K2(B) HA-LP22K24(B)	555 (670)	511 (622)	346 (457)

Notes: 1. When the motor is used without a hanger, plug the thread hole with a bolt of M12×20 or shorter.
2. The terminal block on the terminal box housing consists of M8 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV, BW) and for the thermal protector (OHS1, OHS2).

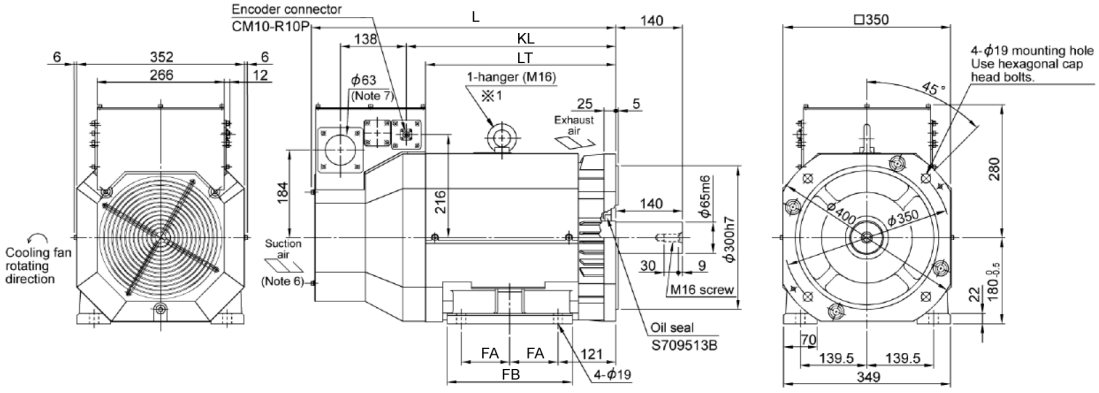
HA-LP15K1, HA-LP20K1, HA-LP15K14, HA-LP20K14
HA-LP22K1M, HA-LP22K1M4, HA-LP30K1M4
HA-LP30K24, HA-LP37K24



Model			Variable Dimensions				
1000r/min	1500r/min	2000r/min	L	KL	LT	FA	FB
HA-LP15K1, HA-LP15K14	HA-LP22K1M, HA-LP22K1M4	HA-LP30K24	605	426	386	105	260
HA-LP20K1, HA-LP20K14	HA-LP30K1M4	HA-LP37K24	650	471	431	127	304

Notes: 1. When the motor is used without a hanger, plug the thread hole with a bolt of M16×20 or shorter.
2. The terminal block on the terminal box housing consists of M8 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV, BW) and for the thermal protector (OHS1, OHS2).
3. When mounting the motor, keep the motor shaft horizontal and its legs downward. Mount the motor either at the legs or the flange.

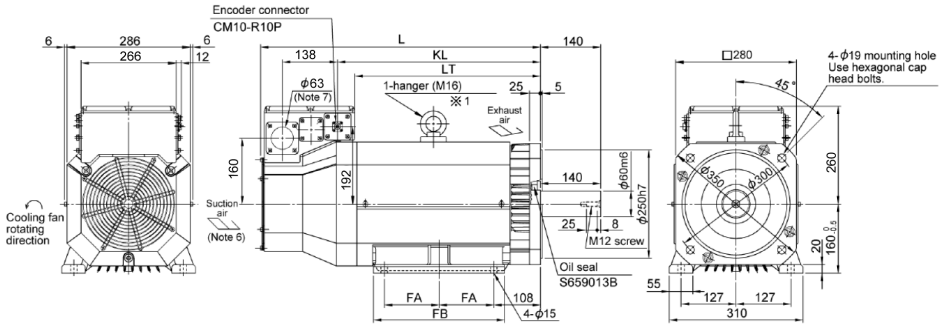
HA-LP25K1, HA-LP30K1, HA-LP25K14, HA-LP30K14
HA-LP37K1M, HA-LP37K1M4, HA-LP45K1M4
HA-LP45K24, HA-LP55K24



Model			Variable Dimensions				
1000r/min	1500r/min	2000r/min	L	KL	LT	FA	FB
HA-LP25K1, HA-LP25K14	HA-LP37K1M, HA-LP37K1M4	HA-LP45K24	640	399	439	101.5	262
HA-LP30K1, HA-LP30K14	HA-LP45K1M4	HA-LP55K24	685	444	484	120.5	300

Notes: 1. When the motor is used without a hanger, plug the thread hole with a bolt of M16×20 or shorter.
2. The terminal block on the terminal box housing consists of M10 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV, BW) and for the thermal protector (OHS1, OHS2).
3. When mounting the motor, keep the motor shaft horizontal and its legs downward. Mount the motor either at the legs or the flange.

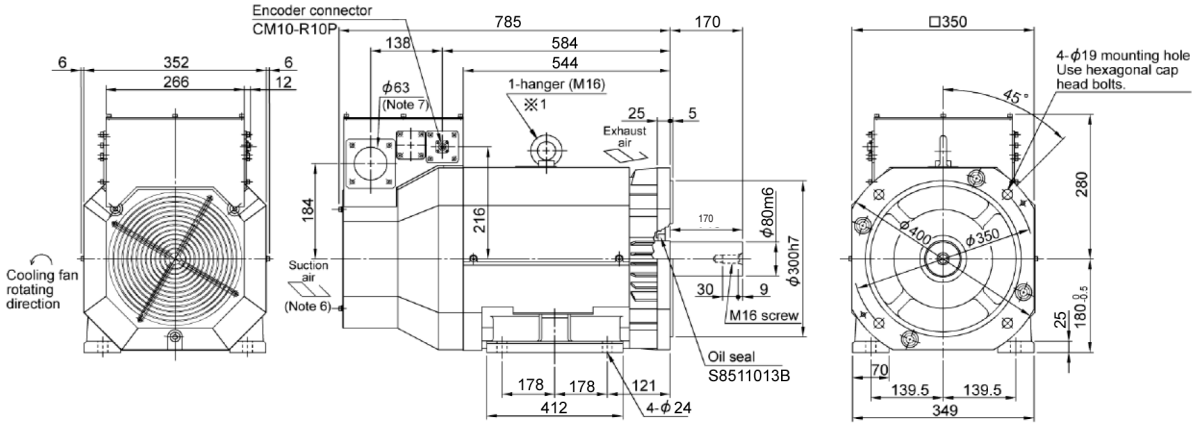
HA-LP30K1M
HA-LP30K2, HA-LP37K2



Model		Variable Dimensions				
1500r/min	2000r/min	L	KL	LT	FA	FB
–	HA-LP30K2	615	421	381	105	260
HA-LP30K1M	HA-LP37K2	660	466	426	127	304

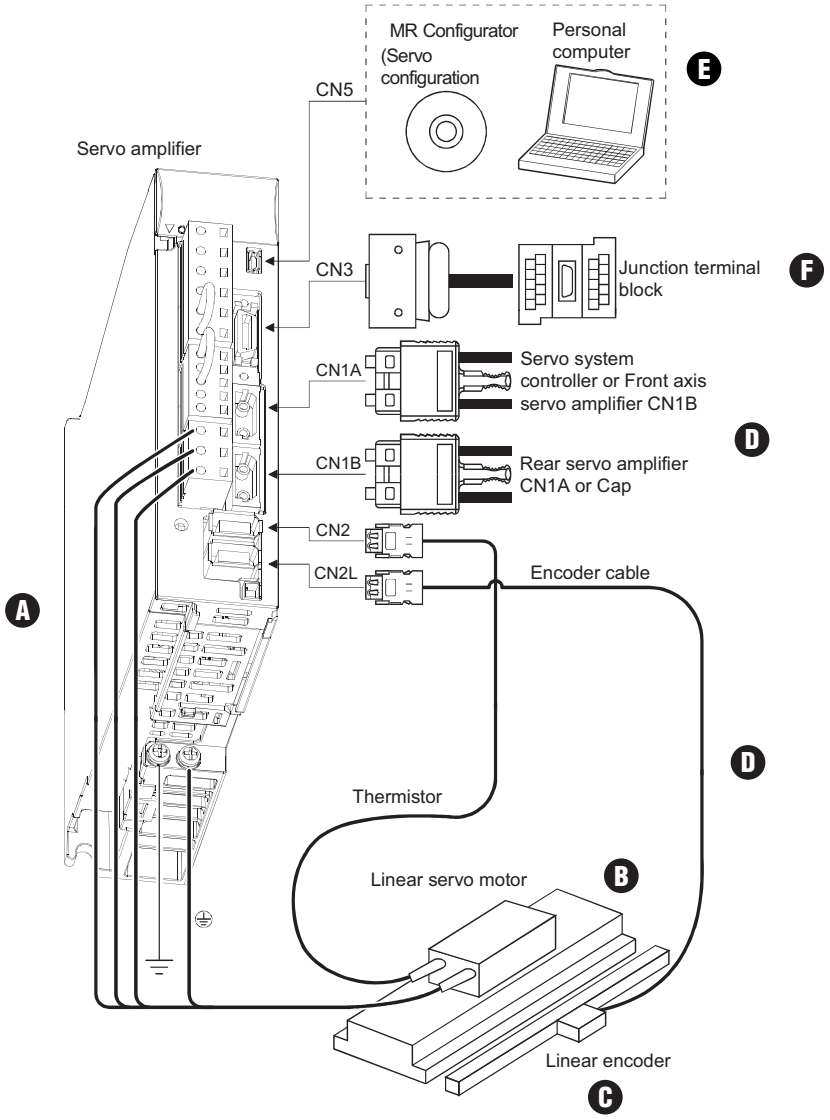
Notes: 1. When the motor is used without a hanger, plug the thread hole with a bolt of M16×20 or shorter.
2. The terminal block on the terminal box housing consists of M8 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV, BW) and for the thermal protector (OHS1, OHS2).
3. When mounting the motor, keep the motor shaft horizontal and its legs downward. Mount the motor either at the legs or the flange.

HA-LP37K1, HA-LP37K14
HA-LP50K1M4



Notes: 1. When the motor is used without a hanger, plug the thread hole with a bolt of M16×20 or shorter.
2. The terminal block on the terminal box housing consists of M10 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV, BW) and for the thermal protector (OHS1, OHS2).
3. When mounting the motor, keep the motor shaft horizontal and its legs downward. Mount the motor either at the legs or the flange.

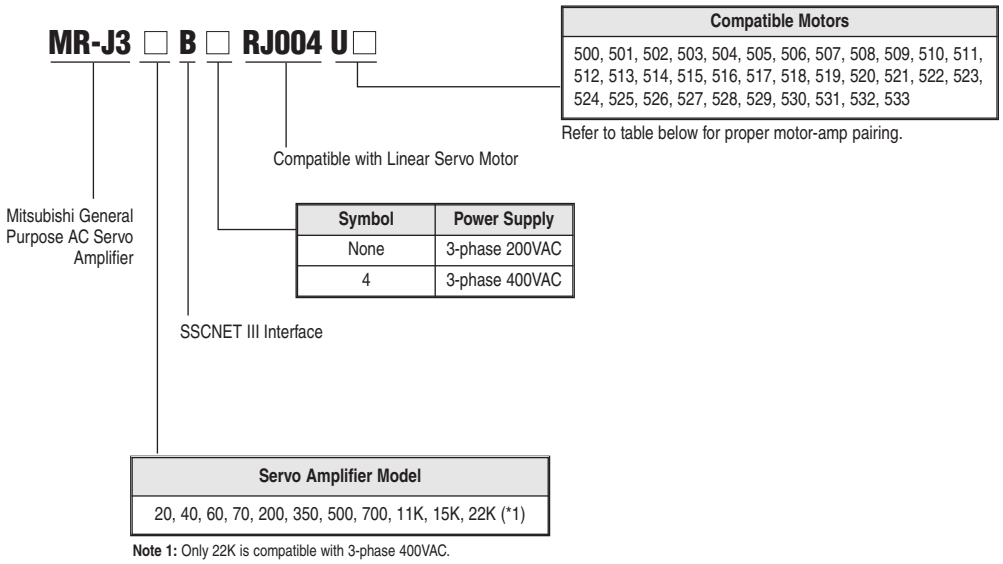
MR-J3 Linear Servomotors and Amplifiers



A. Amplifier.....166
B. Motor.....168
C. Linear Encoder (Customer Supplied).....174
D. Cables and Connectors.....175
E. Software and Manuals.....177
F. Optional Accessories.....177

Ⓐ MR-J3 Linear Amplifiers

Amplifier Selection


MR-J3 □ B □ RJ004 U□
Compatible Motors
500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533
Refer to table below for proper motor-amp pairing.
Compatible with Linear Servo Motor
Mitsubishi General Purpose AC Servo Amplifier
Symbol
Power Supply
None
3-phase 200VAC
4
3-phase 400VAC
SSCNET III Interface
Servo Amplifier Model
20, 40, 60, 70, 200, 350, 500, 700, 11K, 15K, 22K (*1)

Note 1: Only 22K is compatible with 3-phase 400VAC.

Combination of Linear Servo Motor and Servo Amplifier

Linear Servo Motor				Servo Amplifier
Primary Side (Coil)		Stk. ltm	Secondary Side (Magnet)	
LM-H2 Series	LM-H2P1A-06M-4SS0	–	LM-H2S10-288-4SS0, LM-H2S10-384-4SS0, LM-H2S10-480-4SS0, LM-H2S10-768-4SS0	MR-J340BRJ004U500
	LM-H2P2A-12M-1SS0	–	LM-H2S20-288-1SS0, LM-H2S20-384-1SS0, LM-H2S20-480-1SS0, LM-H2S20-768-1SS0	MR-J340BRJ004U501
	LM-H2P2B-24M-1SS0	–		MR-J370BRJ004U502
	LM-H2P2C-36M-1SS0	–		MR-J3200BRJ004U503
	LM-H2P2D-48M-1SS0	–		MR-J3200BRJ004U504
	LM-H2P3A-24M-1SS0	–	LM-H2S30-288-1SS0, LM-H2S30-384-1SS0, LM-H2S30-480-1SS0, LM-H2S30-768-1SS0	MR-J370BRJ004U505
	LM-H2P3B-48M-1SS0	–		MR-J3200BRJ004U506
	LM-H2P3C-72M-1SS0	–		MR-J3350BRJ004U507
	LM-H2P3D-96M-1SS0	–		MR-J3500BRJ004U508
LM-F Series	LM-FP2B-06M-1SS0	–	LM-FS20-480-1SS0, LM-FS20-576-1SS0	MR-J3200BRJ004U518 (for self-cooling) MR-J3200BRJ004U519 (for liquid-cooling)
	LM-FP2D-12M-1SS0	–		MR-J3500BRJ004U520 (for self-cooling) MR-J3500BRJ004U521 (for liquid-cooling)
	LM-FP2F-18M-1SS0	–		MR-J3700BRJ004U522 (for self-cooling) MR-J3700BRJ004U523 (for liquid-cooling)
	LM-FP4B-12M-1SS0	–	LM-FS40-480-1SS0, LM-FS40-576-1SS0	MR-J3500BRJ004U524 (for self-cooling) MR-J3500BRJ004U525 (for liquid-cooling)
	LM-FP4D-24M-1SS0	–		MR-J3700BRJ004U526 (for self-cooling MR-J3700BRJ004U527 (for liquid-cooling)
	LM-FP4F-36M-1SS0	–		MR-J311KBRJ004U528 (for self-cooling) MR-J311KBRJ004U529 (for liquid-cooling)
	LM-FP4H-48M-1SS0	–		MR-J315KBRJ004U530 (for self-cooling) MR-J315KBRJ004U531 (for liquid-cooling)
	LM-FP5H-60M-1SS0	–	LM-FS50-480-1SS0, LM-FS50-576-1SS0	MRJ322KB4RJ004U532 (for self-cooling) (*1) MRJ322KB4RJ004U533 (for liquid-cooling) (*1)
LM-U2 Series	LM-U2PAB-05M-0SS0	–	LM-U2SA0-240-0SS0, LM-U2SA0-300-0SS0, LM-U2SA0-420-0SS0	MR-J320BRJ004U512
	LM-U2PAD-10M-0SS0	–		MR-J340BRJ004U513
	LM-U2PAF-15M-0SS0	–		MR-J340BRJ004U514
	LM-U2PBB-07M-1SS0	–	LM-U2SB0-240-1SS0, LM-U2SB0-300-1SS0, LM-U2SB0-420-1SS0	MR-J320BRJ004U515
	LM-U2PBD-15M-1SS0	–		MR-J360BRJ004U516
	LM-U2PBF-22M-1SS0	–		MR-J370BRJ004U517
	LM-U2P2B-40M-2SS0	–	LM-U2S20-300-2SS0, LM-U2S20-480-2SS0	MR-J3200BRJ004U509
	LM-U2P2C-60M-2SS0	–		MR-J3350BRJ004U510
	LM-U2P2D-80M-2SS0	–		MR-J3500BRJ004U511

Note 1: Servo amplifiers MR-J3-22KB4-RJ004U□, are rated 400VAC. 200VAC class is not available.

Amplifier Specifications

Servo Amplifier Model MR-J3			20BR J004U□	40BR J004U□	60BR J004U□	70BR J004U□	200BR J004U□	350BR J004U□	500BR J004U□	700BR J004U□	11KBR J004U□	15KBR J004U□	22KB4 RJ004U□
Main Circuit Power Supply	Voltage/Frequency (*1)		3-phase 200 to 230VAC 50/60Hz or 1-phase 200 to 230VAC 50/60Hz				3-phase 200 to 230VAC 50/60Hz						3-phase 380 to 480VAC 50/60Hz
	Permissible Voltage Fluctuation		For 3-phase 200 to 230VAC: 3-phase 170 to 253VAC For 1-phase 200 to 230VAC: 1-phase 170 to 253VAC				3-phase 170 to 253VAC						3-phase 323 to 528VAC
	Permissible Frequency Fluctuation		±5% maximum										
Control Circuit Power Supply	Voltage/Frequency		1-phase 200 to 230VAC 50/60Hz										1-phase 380 to 480VAC 50/60Hz
	Permissible Voltage Fluctuation		1-phase 170 to 253VAC										1-phase 323 to 528VAC
	Permissible Frequency Fluctuation		±5% maximum										
	Power Consumption (W)		30						45				
Interface Power Supply			24VDC ±10% (required current capacity: 150mA (*3))										
Linear Encoder Interface	Serial Interface		Mitsubishi high-speed serial communication										
	Pulse Train Interface	Input Signal	ABZ phase differential input signal										
		Minimum Phase Difference	200ns										
Regenerative Resistor/ Tolerable Regenerative Power (W) (*4, *5)	Built-In Regenerative Resistor		10	10	10	20	100	100	130	170	—	—	—
	External Regenerative Resistor (*6)		—	—	—	—	—	—	—	—	500 (800)	850 (1300)	850 (1300)
Control System			Sine-wave PWM control/current control system										
Dynamic Brake			Built-in								External option		
Safety Features			Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage/sudden power outage protection, overspeed protection, excess error protection										
Structure			Self-cooling open (IP00)			Fan cooling open (IP00)							
Environment	Ambient Temperature (*2)		0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)										
	Ambient Humidity		90% RH maximum (non- condensing), storage: 90% RH maximum (non-condensing)										
	Atmosphere		Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust										
	Elevation		1000m or less above sea level										
	Vibration		5.9m/s^2 maximum										
Mass kg (lb)			0.8 (1.8)	1.0 (2.2)	1.0 (2.2)	1.4 (3.1)	2.3 (5.1)	2.3 (5.1)	4.6 (10)	6.2 (14)	18 (40)	18 (40)	19 (42)

Notes:
1. Rated thrust and speed of a linear servo motor are applicable when the servo amplifier, combined with the linear servo motor, is operated within the specified power supply voltage and frequency. Thrust drops when the power supply voltage is below the specified value.
2. The MR-J3-350B-RJ004U□ or smaller servo amplifier can be installed closely. In this case, keep the ambient temperature within 0 to 45°C (32 to 113°F), or use them with 75% or less of the effective load rate.
3. 150mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use.
4. Optimal regenerative resistor varies for each system.
5. Refer to the section "Selecting linear servo 3. Selecting optional regenerative unit" in the MR-J3 manual for the tolerable regenerative power (W).
6. The value applies when the external regenerative resistors, GRZG400-MΩ, (standard accessory) are used with cooling fans (2 units of 92x92mm, minimum air flow:1.0m^3/min). Note that change in the parameter No. PA02 is required.

Electrical wires, circuit breakers, magnetic contactors (example of selection)

The following are examples of wire sizes when 600V polyvinyl chloride insulated wires with a length of 30m are used.

Servo Amplifier	Circuit Breaker	Magnetic Contactor	Electrical Wire Size (mm^2)				
			L1, L2, L3	L11, L21	U, V, W	P, C	THM1, THM2
MR-J3-20B-RJ004U□	30A frame 5A	S-N10	2 (AWG14)	1.25 (AWG16)	1.25 (AWG16)	2 (AWG14)	0.2 (AWG24)
MR-J3-40B-RJ004U□	30A frame 10A						
MR-J3-60B-RJ004U□	30A frame 15A						
MR-J3-70B-RJ004U□							
MR-J3-200B-RJ004U□	30A frame 20A	S-N18			2 (AWG14)		
MR-J3-350B-RJ004U□	30A frame 30A	S-N20	3.5 (AWG12)		3.5 (AWG12)		
MR-J3-500B-RJ004U□ (*1)	50A frame 50A	S-N35	5.5 (AWG10)		5.5 (AWG10)		
MR-J3-700B-RJ004U□ (*1)	100A frame 75A	S-N50	8 (AWG8)		8 (AWG8)	3.5 (AWG12)	
MR-J3-11KB-RJ004U□ (*1)	100A frame 100A	S-N65	14 (AWG6)		22 (AWG4)	5.5 (AWG10)	
MR-J3-15KB-RJ004U□ (*1)	225A frame 125A	S-N95	22 (AWG4)		30 (AWG2)		
MR-J3-22KB4-RJ004U□ (*1)	225A frame 125A	S-N65	14 (AWG6)		22 (AWG4)		

Note:
1. When connecting the wires to the terminal screws, be sure to use the screws attached to the terminal blocks.

B MR-J3 Linear Servomotors

LM-H2 Linear Servomotor Selection

LM-H2P-□□-□M-□ (Primary side: Coil)

Symbol	Maximum Speed
M	2m/s

Symbol	Rated Thrust
06	60N
12	120N
24	240N
36	360N
48	480N
72	720N
96	960N

Symbol	Length (Nominal Dimension)
A	128 mm
B	224 mm
C	320 mm
D	416 mm

Symbol	Width (Nominal Dimension)
1	50 mm
2	70 mm
3	110 mm

Symbol	Motor Model
4SS0	LM-H2P1A-06M
1SS0	LM-H2P2A-12M
	LM-H2P2B-24M
	LM-H2P2C-36M
	LM-H2P2D-48M
	LM-H2P3A-24M
	LM-H2P3B-48M
	LM-H2P3C-72M
	LM-H2P3D-96M

LM-H2S□0-□-□ (Secondary side: Magnet)

Symbol	Motor Model
4SS0	LM-H2P10-288
	LM-H2P10-384
	LM-H2P10-480
	LM-H2P10-768
1SS0	LM-H2P20-288
	LM-H2P20-384
	LM-H2P20-480
	LM-H2P20-768
	LM-H2P330-288
	LM-H2P30-384
	LM-H2P30-480
	LM-H2P30-768

Symbol	Length (Nominal Dimension)
288	288 mm
384	384 mm
480	480 mm
768	768 mm

Symbol	Width (Nominal Dimension)
1	42 mm
2	65 mm
3	105 mm

Note: Please refer to the motor specifications in this catalog for the correct part number configuration.

LM-F Linear Servomotor Selection

LM-FP□□-□M-1SS0 (Primary side: Coil)

Symbol	Maximum Speed
M	2m/s

Symbol	Length (Nominal Dimension)
B	290 mm
D	530 mm
F	770 mm
H	1010 mm

Symbol	Width (Nominal Dimension)
2	120 mm
4	200 mm
5	240 mm

Symbol	Rated Thrust	
	Self-Cooling	Liquid Cooling
06	300N	600N
12	600N	1200N
18	900N	1800N
24	1200N	2400N
36	1800N	3600N
48	2400N	4800N
60	3000N	6000N

Note: Please refer to the motor specifications in this catalog for the correct part number configuration.

LM-FS□0-□-1SS0 (Secondary side: Magnet)

Symbol	Length (Nominal Dimension)
480	480 mm
576	576 mm

Symbol	Width (Nominal Dimension)
2	120 mm
4	200 mm
5	240 mm

LM-U2 Linear Servomotor Selection

LM-U2P□□-□M-□ (Primary side: Coil)

Symbol	Maximum Speed
M	2m/s

Symbol	Rated Thrust
05	50N
07	75N
10	10N
15	15N
22	22N

Symbol	Length (Nominal Dimension)
B	130 mm
D	250 mm
F	370 mm

Symbol	Width (Nominal Dimension)
A	66.5 mm
B	86.5 mm

Symbol	Motor Model
0SS0	LM-U2PAB-05M
	LM-U2PAD-10M
	LM-U2PAF-15M
1SS0	LM-U2PBB-07M
	LM-U2PBD-15M
	LM-U2PBF-22M

LM-U2S□0-□ - □ (Secondary side: Magnet)

Symbol	Motor Model
0SS0	LM-U2PAB-05M
	LM-U2PAD-10M
	LM-U2PAF-15M
1SS0	LM-U2PBB-07M
	LM-U2PBD-15M
	LM-U2PBF-22M

Symbol	Length (Nominal Dimension)
240	240 mm
300	300 mm
420	420 mm

Symbol	Width (Nominal Dimension)
A	62 mm
B	82 mm

LM-U2 Linear Servomotor Selection

LM-U2P2□-□M-□ (Primary side: Coil)

Symbol	Maximum Speed
M	2m/s

Symbol	Rated Thrust
40	400N
60	600N
80	800N

Symbol	Length (Nominal Dimension)
B	286 mm
C	406 mm
D	526 mm

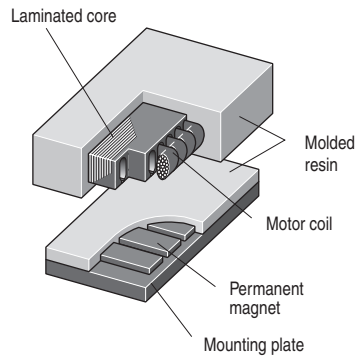
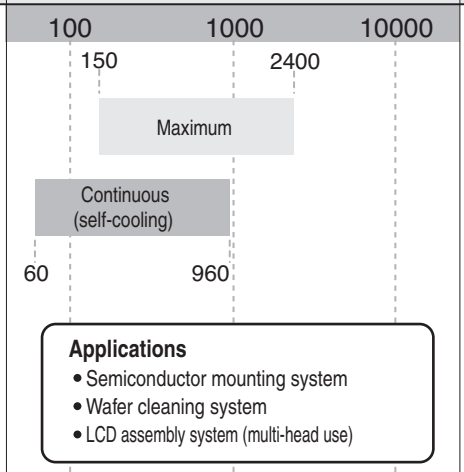
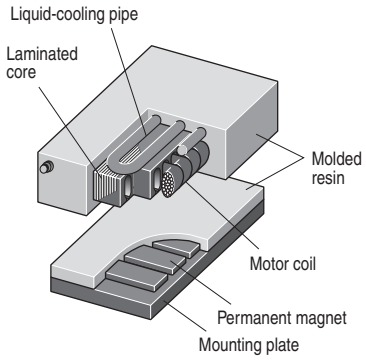
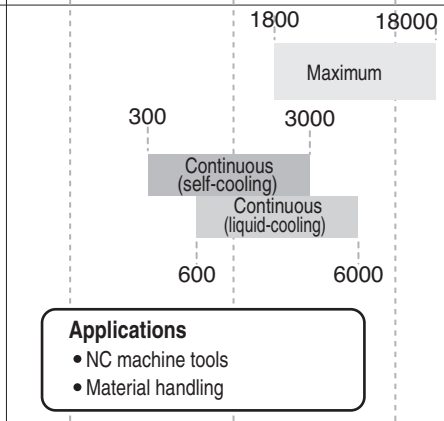
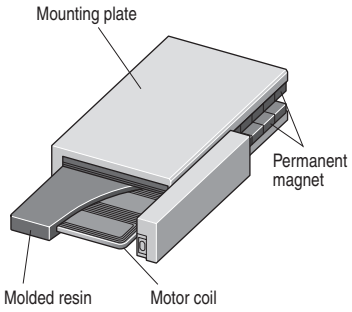
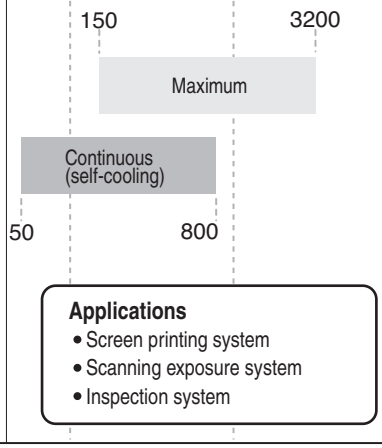
Symbol	Motor Model
2SS0	LM-U2P2B-40M
	LM-U2P2C-60M
	LM-U2P2D-80M

LM-U2S20-□-□ (Secondary side: Magnet)

Symbol	Length (Nominal Dimension)
300	300 mm
480	480 mm

Symbol	Motor Model
2SS0	LM-U2S20-300
	LM-U2S20-480

Servomotor Types

Motor Series	Thrust Range (N)	Features
Core Type **LM-H2 Series** 		**Structure** • The motor consists of the primary side (laminated core + motor coil) and the secondary side (permanent magnets + mounting plate). • The primary side has slots on the laminated core. The motor coil is wound on this laminated core, and the entire section is molded by resin. • The secondary side has flat permanent magnets positioned and fixed on the mounting plate. The entire section is molded by resin. **Features** • The thrust/volume ratio can be increased, allowing space-savings. (High thrust density) • The attraction force functions as the pre-load on the guide, allowing high-rigidity to be attained.
LM-F Series 		**Structure** • The basic structure is the same as the LM-H2 series. However, LM-F series has a liquid-cooling pipe in the primary side to suppress heat generation. **Features** • By circulating cooling liquid at 5 liter/min, the continuous thrust can be twice as much as that of self-cooling.
Coreless Type **LM-U2 Series** 		**Structure** • The motor consists of the primary side (motor coil) and the secondary side (permanent magnets + mounting plate). • The primary side does not have a laminated core. The motor coil is accurately positioned on the base and molded by resin. • On the secondary side, permanent magnets are accurately positioned and fixed to face each other in a U-shaped like mounting plate. **Features** • Speed fluctuations are very small due to elimination of magnetic attraction force and cogging. • The guide life can be extended as there is no attraction force.

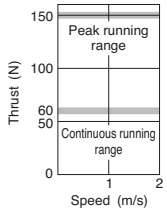
LM-H2 Linear Motor Specifications

Linear Servo Motor Model LM-H2		P1A-06M-4SS0	P2A-12M-1SS0	P2B-24M-1SS00	P2C-36M-1SS0	P2D-48M-1SS0	P3A-24M-1SS0	P3B-48M-1SS0	P3C-72M-1SS0	P3D-96M-1SS0
Amplifier Model MR-J3-		40B-RJ004U500	40B-RJ004U501	70B-RJ004U502	200B-RJ004U503	200B-RJ004U504	70B-RJ004U505	200B-RJ004U506	350B-RJ004U507	500B-RJ004U508
Power Facility Capacity (kVA)		0.9	0.9	1.3	3.5	3.5	1.3	3.5	5.5	7.5
Cooling Method		Self-cooling								
Thrust	Continuous (N)	60	120	240	360	480	240	480	720	960
	Maximum (N)	150	300	600	900	1200	600	1200	1800	2400
Maximum Speed (m/s) (*1)		2.0								
Magnetic Attraction Force (N)		500	1000	1900	2700	3500	2000	3700	5300	7000
Mass kg (lb)	Primary Side (Coil)	0.9(2.0)	1.4(3.1)	2.5 (5.6)	3.6 (8.0)	4.7 (11)	2.4 (5.3)	4.3(9.5)	6.2 (14)	8.1 (18)
	Secondary Side (Magnet)	288mm / piece: 0.6 (1.4) 384mm / piece: 0.8 (1.8) 480mm / piece: 1.0 (2.2) 768mm / piece: 1.6 (3.6	288mm / piece: 1.1 (2.5) 384mm / piece: 1.4 (3.1) 480mm / piece: 1.8 (4.0) 768mm / piece: 2.9 (6.4)				288mm / piece: 3.2 (7.1) 384mm / piece: 4.3 (9.5) 480mm / piece: 5.3 (12) 768mm / piece: 8.5 (19)			
Secondary Side Model LM-H2		S10-□-4SS0	S20-□-1SS0				S30-□-1SS0			
Recommended Load / Motor Mass Ratio		Maximum of 30 times the mass of the linear servo motor's primary side								
Structure		Open (protection level: IP00)								
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)								
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)								
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust								
	Vibration	49m/s^2 maximum								
	Elevation	1000m or less above sea level								

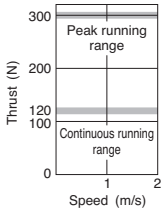
Notes:
1. The linear servo motor's maximum speed or linear encoder's rated speed, whichever is smaller, is the upper limit value of the linear servo motor's speed.

Thrust Characteristics

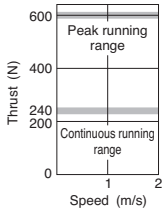
LM-H2P1A-06M-4SS0 (*1)



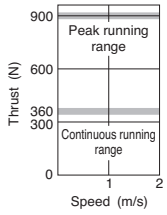
LM-H2P2A-12M-1SS0 (*1)



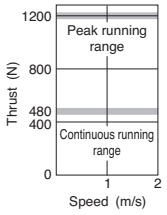
LM-H2P2B-24M-1SS0 (*1)



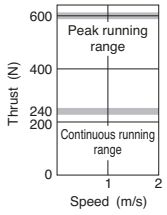
LM-H2P2C-36M-1SS0 (*2)



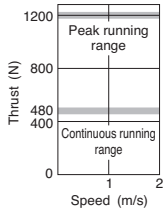
LM-H2P2D-48M-1SS0 (*2)



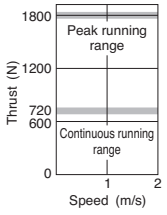
LM-H2P3A-24M-1SS0 (*1)



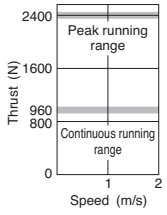
LM-H2P3B-48M-1SS0 (*2)



LM-H2P3C-72M-1SS0 (*2)



LM-H2P3D-96M-1SS0 (*2)



Notes:
1. For 3-phase 200VAC or 1-phase 200VAC.
2. For 3-phase 200VAC.

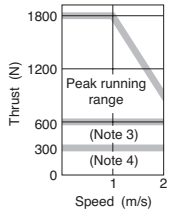
LM-F Series Linear Motor Specifications

Linear Servo Motor Model LM-F		P2B-06M-1SS0	P2D-12M-1SS0	P2F-18M-1SS0	P4B-12M-1SS0	P4D-24M-1SS0	P4F-36P4F-36M-1SS0	P4H-48M-1SS0	P5H-60M-1SS0 (*2)
Amplifier Model MR-J3-	Self-Cooling	200B-RJ004U518	500B-RJ004U520	700B-RJ004U522	500B-RJ004U524	700B-RJ004U526	11KB-RJ004U528	15KB-RJ004U530	22KB4-RJ004U532
	Liquid-Cooling	200B-RJ004U519	500B-RJ004U521	700B-RJ004U523	500B-RJ004U525	700B-RJ004U527	11KB-RJ004U529	15KB-RJ004U531	22KB4-RJ004U533
Power Facility Capacity (kVA)		3.5	5.5	10	7.5	18	18	18	22
Cooling Method		Self-cooling or liquid-cooling							
Thrust	Continuous (Self-Cooling) (N)	300	600	900	600	1200	1800	2400	3000
	Continuous (Liquid-Cooling) (N)	600	1200	1800	1200	2400	3600	4800	6000
	Maximum (N)	1800	3600	5400	3600	7200	10800	14400	18000
Maximum Speed (m/s) (*1)		2.0							
Magnetic Attraction Force (N)		4500	9000	13500	9000	18000	27000	36000	45000
Mass kg (lb)	Primary Side (Coil)	9 (20)	18 (40)	27 (60)	14 (31)	28 (62)	42 (93)	56 (125)	67 (150)
	Secondary Side (Magnet)	480mm / piece: 7.1 (16) 576mm / piece: 9.0 (20)			480mm / piece: 13.5 (30) 576mm / piece: 16.0 (36)				480mm / piece: 20.0 (44) 576mm / piece: 26.0 (58)
Secondary Side Model LM-F		S20-□-1SS0			S40-□-1SS0				S50-□-1SS0
Recommended Load / Motor Mass Ratio		Maximum of 15 times the mass of the linear servo motor's primary side							
Structure		Open (protection level: IP00)							
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)							
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)							
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust							
	Vibration	49m/s² maximum							
	Elevation	1000m or less above sea level							

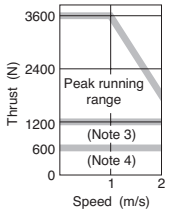
Notes:
1. The linear servo motor's maximum speed or linear encoder's rated speed, whichever is smaller, is the upper limit value of the linear servo motor's speed.
2. Use 400VAC rated servo amplifier.

Thrust Characteristics

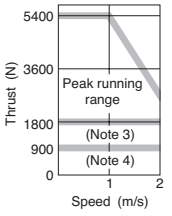
LM-FP2B-06M-1SS0 (*1)



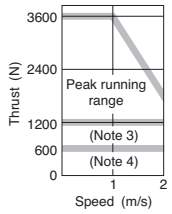
LM-FP2D-12M-1SS0 (*1)



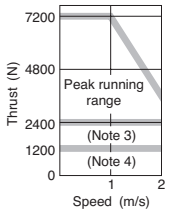
LM-FP2F-18M-1SS0 (*1)



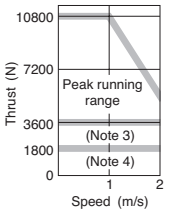
LM-FP4B-12M-1SS0 (*1)



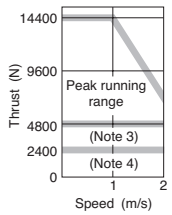
LM-FP4D-24M-1SS0 (*1)



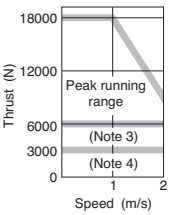
LM-FP4F-36M-1SS0 (*1)



LM-FP4H-48M-1SS0 (*1)



LM-FP5H-60M-1SS0 (*2)



Notes:
1. For 3-phase 200VAC.
2. For 3-phase 400VAC.
3. For continuous running range (liquid-cooling).
4. For continuous running range (self-cooling).

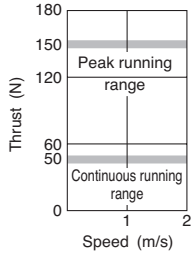
LM-U2 Series Linear Motor Specifications

Linear Servo Motor Model LM-U2		PAB-05M-0SS0	PAD-10M-0SS0	PAF-15M-0SS0	PBB-07M-1SS0	PBD-15M-1SS0	PBF-22M-1SS0	P2B-40M-2SS0	P2C-60M-2SS0	P2D-80M-2SS0
Amplifier Model MR-J3-		20B-RJ004U512	40B-RJ004U513	40B-RJ004U514	20B-RJ004U515	60B-RJ004U516	70B-RJ004U517	200B-RJ004U509	350B-RJ004U510	500B-RJ004U511
Power Facility Capacity (kVA)		0.5	0.9	0.9	0.5	1.0	1.3	3.5	5.5	7.5
Cooling Method		Self-cooling								
Thrust	Continuous (N)	50	100	150	75	150	225	400	600	800
	Maximum (N)	150	300	450	225	450	675	1600	2400	3200
Maximum Speed (m/s) (*1)		2.0								
Magnetic Attraction Force (N)		0								
Mass kg (lb)	Primary Side (Coil)	0.3 (0.67)	0.6 (1.4)	0.8 (1.8)	0.4 (0.89)	0.8 (1.8)	1.1 (2.5)	2.9 (6.4)	4.2 (9.3)	5.5 (13)
	Secondary Side (Magnet)	240mm / piece: 2.0 (4.4) 300mm / piece: 2.5 (5.6) 420mm / piece: 3.5 (7.8)			240mm / piece: 2.6 (5.8) 300mm / piece: 3.2 (7.1) 420mm / piece: 4.5 (10)			300mm / piece: 9.6 (22) 480mm / piece: 15.3 (34)		
Secondary Side Model LM-U2		SA0-□-0SS0			0SB0-□-1SS0			S20-□-2SS0		
Recommended Load / Motor Mass Ratio		Maximum of 30 times the mass of the linear servo motor's primary side								
Structure		Open (protection level: IP00)								
Environment	Ambient Temperature	0 to 40°C (32 to 104°F) (non-freezing), storage: -15 to 70°C (5 to 158°F) (non-freezing)								
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)								
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust								
	Vibration	49m/s² maximum								
	Elevation	1000m or less above sea level								

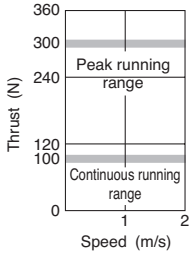
Notes: 1. The linear servo motor's maximum speed or linear encoder's rated speed, whichever is smaller, is the upper limit value of the linear servo motor's speed.

Thrust Characteristics

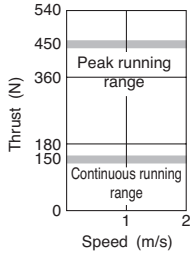
LM-U2PAB-05M-0SS0 (*1)



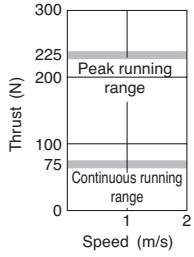
LM-U2PAD-10M-0SS0 (*1)



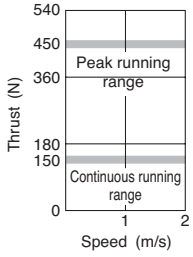
LM-U2PAF-15M-0SS0 (*1)



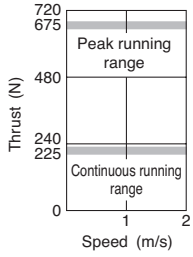
LM-U2PBB-07M-1SS0 (*1)



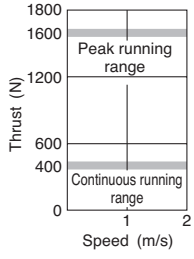
LM-U2PBD-15M-1SS0 (*1)



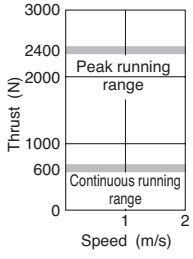
LM-U2PBF-22M-1SS0 (*1)



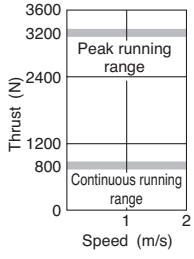
LM-U2P2B-40M-2SS0 (*2)



LM-U2P2C-60M-2SS0 (*2)



LM-U2P2D-80M-2SS0 (*2)



Notes:
1. For 3-phase 200VAC or 1-phase 230VAC.
2. For 3-phase 200VAC.

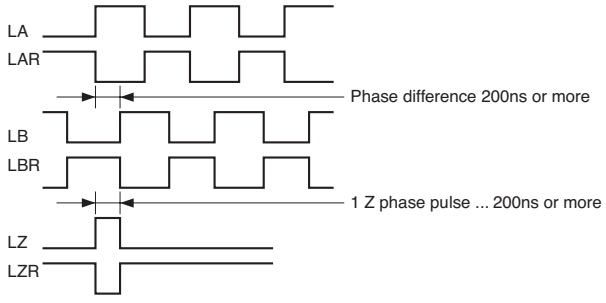
Ⓒ Linear Encoder

Compatible Linear Encoders (*1, *2)

Linear EncoderType		Manufacturer	Model	Resolution	Rated Speed (*4)	Effective Measurement Length (Maximum)	Communication Method	Absolute Position System
Mitsubishi Serial Interface Compatible	Absolute Type	Mitutoyo Corporation	AT343A	0.05μm	2.0m/s	3000mm	2-wire type	✔
			AT543A-SC		2.5m/s	2200mm		
			ST741A	0.5μm	4.0m/s	6000mm		
			ST743A (*8)	0.1μm				
		Heidenhain Corporation	LC491M (*3)	0.05μm 0.1μm	2.0m/s	2040mm	4-wire type	✔
			LC192M		3.0m/s	4240mm		✔
	Incremental Type	Sony Manufacturing Systems Corporation	SL710+PL101-R/RH +MJ830 or MJ831	0.2μm (*5)	6.4m/s	3000mm	2-wire type	–
			SH13+MJ830 or MJ831	0.005μm (*5)	1.4m/s	1240mm		–
		Renishaw Inc.	RGH26P	5μm	4.0m/s	70000mm	2-wire type	–
			RGH26Q	1μm	3.2m/s			–
			RGH26R	0.5μm	1.6m/s			–
		Heidenhain Corporation	LIDA485+APE391M	0.005μm (20/4096μm)	4.0m/s	30040mm	4-wire type	–
			LIDA487+APE391M			6040mm		
ABZ Phase Differential Output Type (*7)	Incremental Type	Not designated	–	Within tolerable resolution range (*6)	Depends on linear encoder	Depends on linear encoder	Differential 3-pair type	–

Notes:

1. Consult with each linear encoder manufacturer for details on the linear encoder's working environment and specifications.
2. The linear servo motor generates heat. Take the linear encoder's working environment temperature into consideration when structuring the system.
3. The linear encoder could malfunction if the ambient temperature is too high. Keep the linear encoder's ambient temperature within the temperature range specified by the manufacturer.
4. The indicated values are the linear encoder's rated speed when used in combination with the Mitsubishi linear compatible servo amplifier. The values may differ from each manufacturer's specifications. The linear servo motor's maximum speed or linear encoder's rated speed, whichever is smaller, is the upper limit value of the linear servo motor's speed.
5. The resolution differs according to the setting value of the interpolator, MJ830/MJ831 made by Sony Manufacturing Systems Corporation. Set the resolution between the minimum resolution and 5μm.
6. The tolerable resolution range is 0.005 to 5μm. Select the linear encoder within this range.
7. Output the A phase, B phase and Z phase signals in the differential line driver. The A phase pulse and B phase pulse phase difference must be 200ns or more, and the Z phase pulse width must be wider than 200ns. Zero point return is not possible with a linear encoder which is not equipped with a Z phase.
8. Servo amplifier with software version A1 or above is compatible with this linear servo.

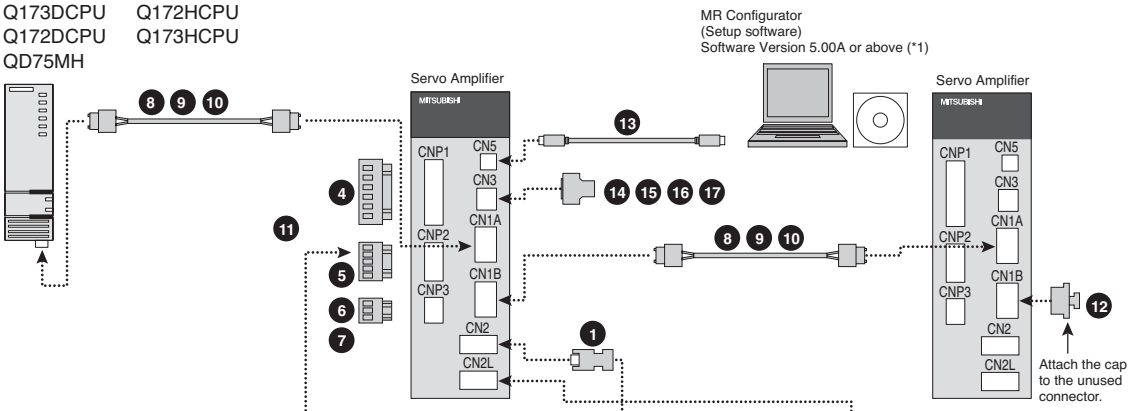


Ⓓ MR-J3-Linear Cables and Connectors

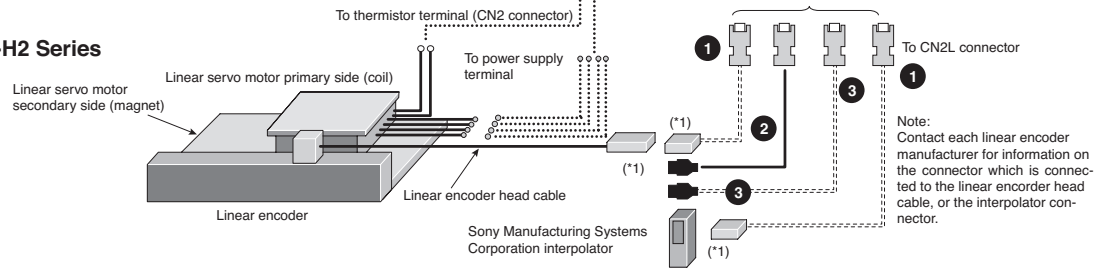
Options for MR-J3-B type

Controller

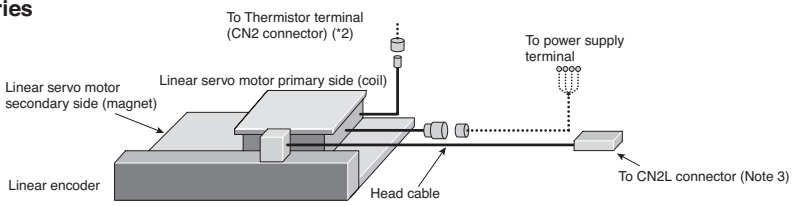
Q173DCPU Q172HCPU
Q172DCPU Q173HCPU
QD75MH



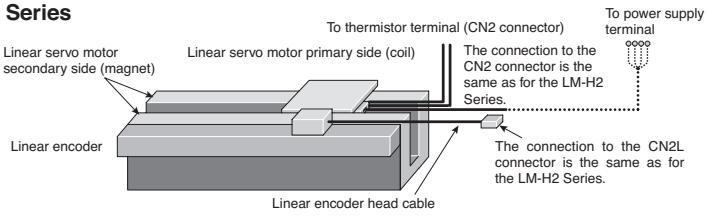
LM-H2 Series


To thermistor terminal (CN2 connector)
To power supply terminal
To CN2L connector
Linear servo motor primary side (coil)
Linear servo motor secondary side (magnet)
Linear encoder
Linear encoder head cable
Sony Manufacturing Systems Corporation interpolator
(*1)
Note:
Contact each linear encoder manufacturer for information on the connector which is connected to the linear encorder head cable, or the interpolator connector.

LM-F Series


To Thermistor terminal (CN2 connector) (*2)
To power supply terminal
Linear servo motor primary side (coil)
Linear servo motor secondary side (magnet)
Linear encoder
Head cable
To CN2L connector (Note 3)

LM-U2 Series


To thermistor terminal (CN2 connector)
To power supply terminal
Linear servo motor primary side (coil)
Linear servo motor secondary side (magnet)
The connection to the CN2 connector is the same as for the LM-H2 Series.
Linear encoder
The connection to the CN2L connector is the same as for the LM-H2 Series.
Linear encoder head cable

Notes:

1. Setup software MR- Configurator Software version 5.00A or above is planned to be compatible with MR-J3- □B-RJ004U□.
   Refer to the following for software versions of Q172HCPU and Q173HCPU compatible with linear servo LM Series.
   • Q172HCPU, Q173HCPU OS software (SW6RN-SV13MM /-SV22MM): Software version: 00D or above
   • Integrated start-up support software MT Developer (SW6RNC-GSVPROE/-GSVSETE): Software version: 00N or above
2. The linear encoder, linear encoder head cable and encoder cable are not enclosed with the purchased linear servo motor and must be prepared by the user.
3. Use the recommended linear encoder manufacturer's products for the linear encoder and linear encoder head cable.
4. Consult with the linear encoder manufacturer regarding the working environment and specifications, and select the proper products.

***Cautions regarding the linear encoders**

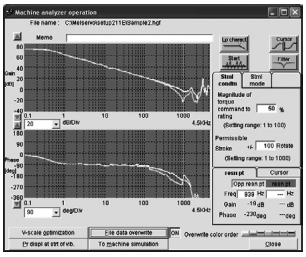
- Linear encoder, head cable and encoder cable are not supplied with the linear servo motor.
- Linear encoder and head cable, manufactured by the recommended manufacturers, must be used.
- Consult relevant manufacturers for details on linear encoder's working environment and specifications.

MR-J3 Linear Servo Cables and Connectors

Item		Model	Stocked Lengths	Protection Level	Description
1	CN2 or CN2L Connector	MR-J3CN2	S	IP20	
2	CN2 or CN2L Cable	MR-EKCBL□M-H (□ = cable length 2, 5, 10m)	2, 5, 10	IP20	
3	CN2 or CN2L Connector Set	MR-ECNM	S	IP20	
4	CNP1 Connector 1kW or less (Comes with J3 Amp Standard)	54928-0670	S	—	
	CNP1 Connector 2kW – 3.5kW (Comes with J3 Amp Standard)	PC4/6-STF-7.62	S	—	
5	CNP2 Connector up to 3.5kW (Comes with J3 Amp Standard)	54927-0510	S	—	
6	CNP3 Connector 1kW or less (Comes with J3 Amp Standard)	54928-0370	S	—	
	CNP3 Connector 2kW – 3.5kW (Comes with J3 Amp Standard)	PC4/3-STF-7.62	S	—	
7	CNP1-2-3 Insertion Tool (Comes with J3 Amp Standard)	54932-0000	S	—	
8	SSCNET III Cable (Standard Cord For Inside Panel)	MR-J3BUS□M (□ = cable length 0.15, 0.3, 0.5, 1, 3m)	0.15, 0.3, 0.5, 1, 3	—	
9	SSCNET III Cable (Standard Cable For Outside Panel)	MR-J3BUS□M-A (□ = cable length 5, 10, 20m)	5, 10, 20	—	
10	SSCNET III Cable (Long Distance Cable)	MR-J3BUS□M-B (□ = cable length 30, 40, 50m)	30	—	
12	Connector Cap for SSCNET III	Connector comes with amplifier standard	—	—	
13	Personal Computer Communication Cable USB Cable	MR-J3USBCBL3M (Cable length 3m)	S	—	
14	CN10 or CN3 Signal Connector (20 Pin)	MR-J2CN1	S	—	
15	CN10 or CN3 Pigtail Cable (20 Pin)	MR-CCN1CBL-□M (□ = cable length 3, 5m)	3, 5	—	
16	20 Pin Terminal B Lock For J3-B (TB20 Cannot Be Used)	PS7DW-20V14B-F	S	—	
17	Cable for PS7DW-20V14B-F Terminal Block	MR-J2HBUS□M (□ = Cable length 05, 1, 3, 5m)	0.5, 1, 3, 5	—	

Ⓔ Software and Manuals

MR Configurator • (MRZJW3-SETUP221E)



(*1)

This software makes it easy to perform setup, tuning, monitor display, diagnostics, reading and writing of parameters, and test operations with a personal computer. User-satisfying functions that enable the balance with the machine system, optimum control and short start up time are available.

1. This software can set up and tune your servo system easily with a personal computer.
2. Multiple monitor functions
   Graphic display functions are provided to display the servo motor status with the input signal triggers, such as the command pulse, droop pulse and speed.
3. Test operations with a personal computer
   Test operation of the servo motors can be performed with a personal computer using multiple test mode menus.
4. Further advanced tuning is possible with the improved advanced functions.

Description	Model Number	Stocked Item
Windows Communication Software	MR-CONFIGURATOR	S
Communication Cable	MR-J3USBCBL3M	S

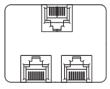
Manuals

Hardware Description	Model Number	Stk Item
MR-J3-B-RJ004 Instruction Manual	SH(NA)030054	–

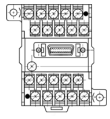
Note: Many of these manuals are available for free download from our website, www.meau.com

Ⓕ Optional Accessories

RS-422 Distributor (For Multidrop)

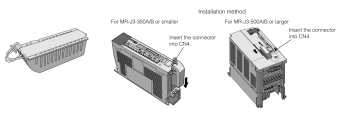
Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-B-RJ004	BMJ-8	S	

20 Pin Terminal Block (*1)

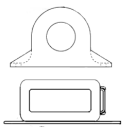
Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-B-RJ004	PS7DW-20V14B-F	S	

Note: MR-TB20 terminal block cannot be used for MR-J3-B.

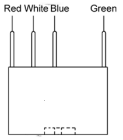
Battery

Item Number	Model Number	Description	Stk Item	Description
Battery	MR-J3BAT	The servo motor's absolute value can be maintained by installing the battery in the servo amplifier. The battery is not required when the servo system is used in an incremental mode.	S	
Battery Connection Relay Cable	MR-J3BTCBL03M	Use this relay cable to hold the absolute value when shipping the product with the machine and servo amplifier removed. The servo motor HF series does not have a super capacitor (for holding an absolute value for short time) in the encoder. When this optional cable is used, the absolute value can be held even when the encoder cable is disconnected from the servo amplifier, making it easy to do maintenance on the servo amplifier.	S	

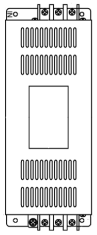
Line Noise Filter

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-200B-RJ004 or smaller	FR-BSF01	S	
MR-J3-350B-RJ004 or larger	FR-BLF	S	

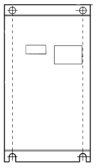
Radio Noise Filter

Servo Amplifier Type	Model Number	Stocked Item	
All 200VAC J3 Models	FR-BIF	S	
All 400VAC J3 Models	FR-BIF-H	—	

EMC Filter

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-70B-RJ004 and less	HF3010A-UN	S	
MR-J3-200B-RJ004 ~ 350B-RJ004	HF3030A-UN	S	
MR-J3-500B-RJ004 ~ 700-RJ004	HF3040A-UN	S	
MR-J3-11KB-RJ004 ~ 15K-RJ004	HF3100A-UN	S	

Power Regeneration Converter

Servo Amplifier Type	Model Number	Stocked Item	
MR-J3-500B-RJ004	FR-RC-15K	–	
MR-J3-700B-RJ004 – 15K-RJ004	FR-RC-30K	–	

Brake/Resistor Units (Must be used in conjunction with each other)

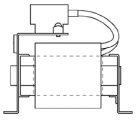
Servo Amplifier Model	Brake Unit Model Number	Stk Item	Resistor Unit Model Number	Stk Item
MR-J3-500B-RJ004 ~ 700B-RJ004	FR-BU2-15K	S	FR-BR-15K-UL	S
MR-J3-11KB-RJ004 ~ 15K-RJ004	FR-BU2-30K	S	FR-BR-30K-UL	S

Power Regeneration Common Converter/ Stand-Alone Reactor

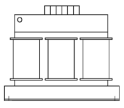
(Must be used in conjunction with each other). Up to six servo amplifiers can be connected to one FR-CV, refer to manuals for details.

Servo Amplifier Model	Common Converter Model Number	Stk Item	Reactor Model Number	Stk Item
MR-J3-350B-RJ004	FR-CV-7.5K	–	FR-CVL-7.5K	–
MR-J3-500B-RJ004	FR-CV-11K	–	FR-CVL-15K	–
MR-J3-700B-RJ004	FR-CV-15K	–	FR-CVL-11K	–
MR-J3-11KB-RJ004	FR-CV-22K	–	FR-CVL-22K	–
MR-J3-15KB-RJ004	FR-CV-30K	–	FR-CVL-30K	–
	FR-CV-37K	–	FR-CVL-37K	–

DC Power Improvement Reactor

Servo Amplifier Type	Model Number	Stk Item	
MR-J3-40B-RJ004	DCA000902	–	
MR-J3-70B-RJ004			
MR-J3-200B-RJ004	DCA001802	–	
MR-J3-350B-RJ004	DCA003202	–	
MR-J3-500B-RJ004	DCA005001	–	
MR-J3-700B-RJ004 ~ 11K-RJ004	DCA008002	–	
MR-J3-15K-RJ004	DCA011003	–	
MR-J3-22K4-RJ004	DCA008005	–	

AC Power Factor Improvement Reactor

Servo Amplifier Type	Model Number	Stk Item	
MR-J3-40B-RJ004	MRL-00401	–	
MR-J3-70B-RJ004	MRL-00801	–	
MR-J3-200B-RJ004	MRL-01801	S	
MR-J3-350B-RJ004	MRL-03501	–	
MR-J3-500B-RJ004	MRL-04501	–	
MR-J3-700B-RJ004 ~ 11K-RJ004	MRL-05501	–	
MR-J3-15K-RJ004	MRL-08001	–	
MR-J3-22K4-RJ004	MRL-05502	–	

Optional Regeneration Resistors

Servo Amplifier Model (MR-J3-)	Capacitor Charging (J)	Inverse Efficiency (%)	Built-in Regenerative Resistor/ Tolerable Regenerative Power (W)	External Regenerative Resistor/ Standard Accessory	Optional Regeneration Resistors/Tolerable Regenerative Power (W)									
					MR-RB									
					032 (40Ω)	12 (40Ω)	30 (13Ω)	31 (6.7Ω)	32 (40Ω)	50 (13Ω) (*1)	51 (6.7Ω)(*1)	5E (6Ω) (*2)	9P (4.5Ω) (*2)	6K-4 (10Ω) (*2)
Stocked Item	N/A	N/A	–	N/A	S	S	S	–	S	S	S	–	–	–
20B-RJ004U	9	70	10	—	30	100	—	—	—	—	—	—	—	—
40B-RJ004U	11	85	10	—	30	100	—	—	—	—	—	—	—	—
60B-RJ004U	11	85	10	—	30	100	—	—	—	—	—	—	—	—
70B-RJ004U	18	80	20	—	30	100	—	—	300	—	—	—	—	—
200B-RJ004U	40	85	100	—	—	—	300	—	—	500	—	—	—	—
350B-RJ004U	40	85	100	—	—	—	300	—	—	500	—	—	—	—
500B-RJ004U	45	90	130	—	—	—	—	300	—	—	500	—	—	—
700B-RJ004U	70	90	170	—	—	—	—	300	—	—	500	—	—	—
11KB-RJ004U	120	90	—	500 (800)	—	—	—	—	—	—	—	500 (800)	—	—
15KB-RJ004U	170	90	—	850 (1300)	—	—	—	—	—	—	—	—	850 (1300)	—
22KB4-RJ004U	250	90	—	850 (1300)	—	—	—	—	—	—	—	—	—	850 (1300)

Notes:

1. Be sure to install cooling fans. The cooling fan must be prepared by the user.

2. The values in ( ) indicate when cooling fans (2 units of 92 x 92 mm, minimum air flow: 1.0^3/min) are installed, and the parameter No. PA02 is changed.